Gleanings in Bee Culture

Established 1873

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November, 1938

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5-lb. pails, per case of 12	.95
5-lb. pails, per carton of 50	3.20
10-lb. pails, per case of 6	.80
10-lb. pails, per carton of 50	4.70
60-lb. cans, in bulk, each	.34
60-lb. cans, per box of 2	1.00
60-lb. cans, per carton of 24	7.85

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Size, Sections	100	500
4 ¼ x 4 ¼ x 1 ⅞	$1.00	$4.50
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4 ¼ x 4 ¼ x 1 ½	1.00	4.00
4 x 5 x 1 ⅝	1.10	5.00

MODERNISTIC GLASS JARS

Description	Per case	10 cs. lots
6½ oz. jars, packed 2 doz.	70c	68c
16 oz. jars, packed 2 doz.	85c	83c
32 oz. jars, packed 1 doz.	80c	78c
48 oz. jars, packed 1 doz.	85c	83c

DESCRIPTION—5 Gal.....60 lb. Cans

Bulk, less than 50 (new), each ..... .35
Bulk, more than 50 (new), each ..... .30
Packed Individual cartons,
1 to 50 (new), each ..... .45
50 or more (new), each ..... .40
5 lb. Pails .... 50—$3.50 ... 100—$6.90
10 lb. Pails .... 50— 5.00 ... 100— 9.90
2½ lb. Pails .... 50— 3.00 ... 100— 5.75

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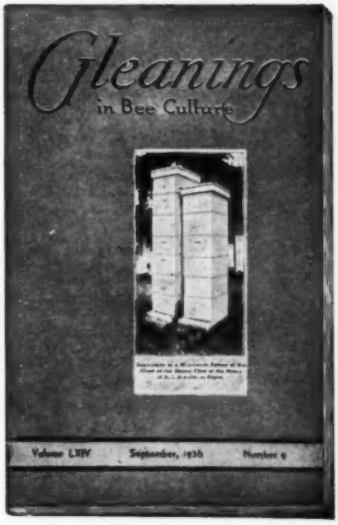
Medina, Ohio



WHEN WRITING TO ADVERTISERS, MENTION GLEANINGS.

The Monthly Honey Market

U. S. GOVERNMENT REPORT
Information from Producing Areas (first half of October).

California Points: Southern California—The weather has been variable, with considerable cloudiness and slight rainfall. Temperatures have ranged from normal to considerably above normal during these two weeks. The condition of colonies varies rather widely. Where goldenrod, eucalyptus, blue curl, rabbit brush, sunflower and other flowers are available bees are in good condition with sufficient winter stores of pollen and nectar. Numerous colonies, however, will have to be fed fully half their winter stores. Many colonies in the orange section were moved north for cotton and star thistle and have not been returned. Blue curl is yielding considerable nectar in portions of the orange belt. Occasional sage areas near the coast report extremely light returns this year and some large beekeepers report absolutely no surplus. Brood rearing is tapering off but most colonies show brood in two or three frames. Beekeepers have been offering honey rather freely, but inquiry and demand, both foreign and domestic, are only moderate, with most buying restricted to quantities sufficient to meet the buyers' immediate requirements. Orange honey was being held more firmly by most beekeepers at the close but prices on other types of honey were generally unchanged. Sales by beekeepers in ton lots or more at Southern California delivery points, per lb.: Orange, Extra White to Water White 5½-5⅝c, few 5¾c, White 5-5¼c; Sage Buckwheat, Light Amber to Extra Light Amber 3¾-4⅛c, mostly 4c; Light Amber Buckwheat 3¾-4c. Beeswax was in moderate demand, with offerings liberal and with a weaker undertone toward the close of the period. Prevailing prices ranged 16-18c per lb. delivered Los Angeles.

Imperial Valley—Demand for honey is reported better than at this time last year and beekeepers are reported inclined to hold for better prices. Sales reported Light Amber to Extra Light Amber Alfalfa, few sales $4.45 per case, occasional lot best high as $4.75 per case.

Northern California — Temperatures here have been above normal; showers have occurred along the northern coast, with moderate to heavy rains early in the period. Some snow and heavy rains reported also in the high Sierras. Bees have stopped storing cedar honeydew, but some nectar and pollen are still available in the Valley, where some pollen should be available for another month. Many floral sources, however, have been dried up or killed. Bees appear to be in good condition, with sufficient honey for winter. Occasional colonies, however, are in such shape that they will require feeding. Little market activity reported, with dealers buying only limited quantities of honey. Prices show little

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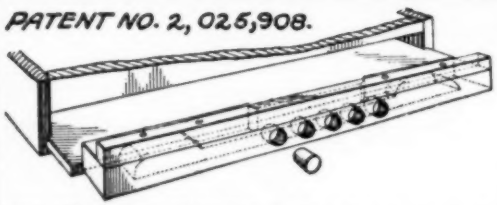

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We are always in the Market for Beeswax.

change from those of two weeks ago. Sales by beekeepers in ton lots or more, per lb., at Northern California delivery points—Thistle, Extra Light Amber to White 4½-5c, occasional lot Extra Light Amber 4¼-4⅜c; Light Amber to Extra Light Amber Alfalfa 3½-4c; Mixed Flowers, Light Amber to Extra Light Amber 3-3½c. Few sales comb honey, $3.50 per case.

Limited receipts of beeswax reported at 18-20c per lb. at Central and Northern California delivery points.

SUMMARY—Over much of the country the weather has been much warmer than usual during this period, with especially high temperatures through the clover and sweet clover areas. Along the east coast temperatures have ranged from below normal during the early portion of the period to much above normal at the close. Though rain is needed over much of the area between the Appalachians and the Rock Mountains, early rains were sufficient so that nectar-bearing plants are still in fairly good shape for next year. Where frosts have not occurred some late nectar and pollen are still being gathered from late aster and other late blooms, though in the North the flowers, even when available, contain little nectar. The fall flow in general was much below normal and feeding has been necessary in many yards where beekeepers wanted to make sure that winter stores were adequate. Brood-rearing continued late in most sections and colonies generally will have an adequate supply of young bees. Demand for extracted honey in large lots is still slow, but local demand has been fairly good and may take care of a larger volume of honey than usual. Distress lots of honey are now more nearly cleaned up, and minimum prices in the White Clover Belt are slightly higher than was the case two weeks ago. Elsewhere prices are holding steady on the whole, and in some cases increased market strength is evident. Comb honey is rapidly being sold, especially in the West. In spite of the large crop in portions of the Clover and Sweet clover sections beekeepers in many other important areas have a crop below normal. This emphasizes the fact that the current marketing problem is not primarily one resulting from over-production of honey this season, but rather the result of inadequate distribution. Beeswax continues to weaken.

Monthly Report of Honey Producers

Early in October we sent the following questions to honey producers: 1. What is the final average yield per colony to date this season in your locality of (a) extracted honey? (b) comb honey? Give answer in pounds. 2. How does this compare with the average yield for your locality? Give answer in per cent.. 3. At what price has honey been sold or contracted for, if any, in large lots (carload or less) in your locality, during the past month, for (a) extracted honey, per pound? (b) comb honey, fancy and No. 1, per case? 4. What are prices when sold to grocers in case lots of (a) extracted honey in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) comb honey, fancy and No. 1, per case? 5. What is the retail price to consumers in your locality for (a) extracted honey in 5 lb. pails, or other retail packages in terms of 5 lb. pails? (b) Comb honey, fancy and No. 1, per section? 6. How is honey now moving on the market in your locality? Give answer in one word, as slow, fair or rapid. 7. What is the condition of the colonies for winter in your locality compared with normal, considering the number and age of bees and the supply of stores? Give answer in per cent.

State	Name	Aver. yield. Comparison of Ex.	Comb.	Aver.	Large lots. Ex.	Comb.	To grocers. Ex.	Comb.	To consumers. Ex.	Comb.	Movement.	Cond. of colo
SE-Ala.	(H. C. Short)	0		100			.55		.65		Fair	100
B. C.	(A. W. Finlay)	75		120	.10		.70		.90		Fair	100
S-Calif.	(L. L. Andrews)	40		50	.05⅝					.14	Fair	90
E-Conn.	(Allen Latham)	43	20	60			.75		1.00	.30	Slow	
S-Fla.	(C. C. Cook)	40		60	.06		.40		.55		Slow	
C-Fla.	(Harry Hewitt)	120		150			.38		.49		Slow	100
SE-Ga.	(J. J. Wilder)	80	60	120	.05½		.50		.65		Fair	100
NC-Ills.	(A. L. Kildow)	100	25	125	.05				.50	.13	Fair	125
S-Ills.	(Carl E. Killion)	100	80	125	.06	2.75	.55	3.12	.70	.15	Fair	150
NC-Ind.	(T. C. Johnson)	125	75	150			.55	3.60	.65	.20	Fair	100
NW-Ind.	(E. S. Miller)	125	75	125			.50	3.25	.65	.17	Fair	100
W-Iowa	(W. G. Brown)	180		150	.05		.45		.60	.20	Rapid	120
N-Me.	(O. B. Griffin)		45					4.80		.30	Fair	90
C-Md.	(S. G. Crocker)	25	20	40			.60	4.00	.75	.25	Slow	100
N-Mich.	(Ira D. Bartlett)	100	50	66⅔	.05½		.45	3.50	.55	.20	Fair	
S-Mich.	(Floyd Markham)	250		200	.06⅔	3.00	.55	3.60	.75	.20	Fair	100
C-Mich.	(E. D. Townsend)				.06½						Fair	
E-Minn.	(Floyd W. Ray)	90		85	.05½		.40	3.50	.49		Fair	110
W-Nev.	(Geo. C. Schweis)	30	15	25		3.12	.40	3.25	.50	.20	Fair	100
W-N. M.	(C. A. Baltzley)	76		85			.58		.75	.25	Fair	100
NW-N. Y.	(Geo. B. Howe)	60		60	.06			3.50	.60	.25	Fair	100
C-N. Y.	(F. W. Lesser)	100		125	.07						Fair	100
NW-N. C.	(C. S. Baumgarner)		20	50			.75		.90	.25	Slow	90
SE-N. C.	(W. J. Martin)	100	100	75	.06		.60		.75	.20	Fair	100
C-Ohio	(R. D. Hiatt)	140	84	120	.06½		.50	3.50	.65	.19	Fair	110
W-Ore.	(H. A. Scullen)	85		90			.38		.50		Fair	100
C-Pa.	(Harry Beaver)	110		120			.50	3.60	.60	.17	Rapid	100
SE-Pa.	(D. C. Gilham)	50	30	60	.06½		.70	4.25	1.00	.25	Fair	100
W-S. C.	(E. S. Prevost)	20	15	50			.18		.20		Fair	80
SE-S. D.	(J. F. Norgren)	90	75	95			.45	3.50	.55	.18	Slow	110
C-Texas	(T. A. Bowden)	50		100			.45		.55		Fair	100
S-Texas	(J. N. Mayes)	65	10	75	.05		.45				Fair	80
S-Texas	(H. B. Parks)	50		98	.06		.48		.55		Fair	100
N-Utah	(W. H. Hendricks)	40		60			.42		.55		Slow	100
SC-Wash.	(Chas. Higgins)	70		70	.06				.50		Fair	95
SE-Wash.	(Ryon R. Isbell)	60	40	90	.06¼		.48	3.40	.49	.18	Slow	80
N-W. Va.	(W. C. Griffith)								.50	.18	Slow	100
SE-Wisc.	(N. E. France)	100		100	.05				.58	.14	Slow	100
N-Wyo.	(Earl C. Reed)	100		100	.05½		.45		.55		Fair	80

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State of Ohio, County of Medina, ss.:

Before me, a Notary Public in and for the state and county aforesaid, personally appeared M. J. Deyell, who, having been duly sworn according to law, deposes and says that he is the Editor of Gleanings in Bee Culture, and that the following is, to the best of his knowledge and belief, a true statement of the ownership, management (and if a daily paper, the circulation), etc., of the aforesaid publication for the date shown in the above caption, required by the Act of August 24, 1912, embodied in section 411, Postal Laws and Regulations, printed on the reverse of this form, to wit:

1. That the names and addresses of the publisher, editor, managing editor, and business managers are:

Name of— Post office address—

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Editors, E. R. Root and M. J. Deyell, Medina, Ohio.

Business Manager, M. J. Deyell, Medina, O.

2. That the owner is: (if owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding one per cent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a firm, company, or other unincorporated concern, its name and address, as well as those of each individual member, must be given.)

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5. That the average number of copies of each issue of this publication sold or distributed through the mails or otherwise, to paid subscribers during the twelve months preceding the date shown above is (This information is required from daily publications only.)

M. J. DEYELL, Editor.

Sworn to and subscribed before me this 4th day of October, 1938.

HAROLD C. WEST, Notary Public.

(My commission expires Mar. 27, 1940.)

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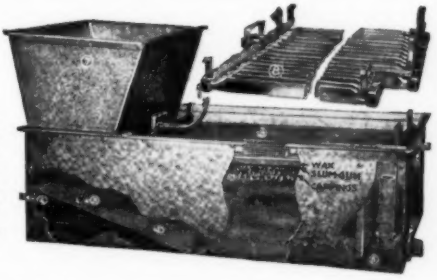

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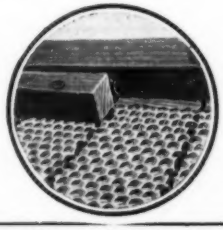

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Vol. 66
No. 11

Gleanings in Bee Culture

November
1938

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Walter H. Hull

A Method Requiring only Simple and Inexpensive Equipment

Among my neighbors is a man who has kept bees for many years and with unusual success. In talking with him from time to time I have been surprised at the soundness of his scientific knowledge in regard to bees, for he did not appear to be a student and, in fact, made no pretense of being one. He kept only a few bees, and as he used to bring the supers around for me to extract I could see that he was getting higher and more consistent yields than any one else that I knew of in that vicinity, including myself. Which shows that in spite of his modest pretensions he was a keen and accurate observer and well informed on this subject.

Last year he moved to another place and sold his bees in moving. Although he bought more in the spring they were in poor condition; so for the first time in years he found himself that fall without honey. To remedy that condition he ordered a 60-lb. can of honey, which I had ready for him, properly liquefied, when he called for it at the appointed time. But a few days later he called for another which, upon opening, we found had begun to granulate. More as a gesture of accommodation than because I thought he would want me to do it, I offered to melt it for him.

"If you don't mind," he said, "I wish you would do that, and I'll call again for it; because—" and here I got the second surprise—"I wouldn't know what to do with it the way it is."

Well, we found a can that was still liquid and he took it, so I did not have to melt the other. It seems that he intended to pour the honey out into half-gallon jars, which he could liquefy as desired on the kitchen stove, but liquefying a 60-lb. can was something which he had never had occasion to do, the details of which therefore he had never got clearly in mind.

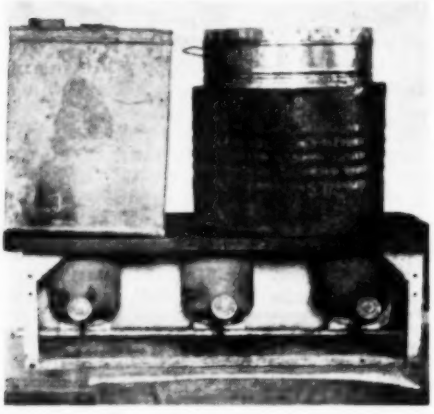
From what I see and hear and read it seems likely that there are a great many beekeepers in similar difficulties when it comes to putting up honey for market. I can understand this better having been in like difficulty myself. Putting up a pack that will be clear and free from foam has been described from time to time in the bee journals. Usually the directions called for some equipment that I did not have, so that I was forced to make shift with something else. Also it frequently happened that when the instructions were followed literally the result fell short of my requirements. What I wanted was a jar of honey that I

could set up in the city markets beside that of the big bottler and feel that it could hold its own.

There are outfits on the market that will process and filter your honey, or that will process it without filtering, in an efficient and practical manner, insuring a first-class pack. Those outfits cost too much for the small beekeeper; yet his honey must compete in the market with the high-class pack made possible by this expensive equipment. It is to show how this may be done that the following methods, worked out in the course of several years' experience, are described.

In the first place, we will assume that at extracting time you have run the honey through a wire strainer covered with thin cheese-cloth. That is about as much straining as one can do at extracting time unless he works very slowly. It will remove bits of comb and other coarse refuse, and some but not all of the pollen grains. In order to turn out a first-class pack you must strain the honey again through at least two thicknesses of closely-woven cheesecloth.

During the past year, outfits for straining the honey clean at extracting time have been described in the bee journals. If you have used one of them, well and good; you need not strain it again. But these methods generally call for heat. It appears that cold honey runs through a closely-woven strainer so slowly that it is not practical to try to strain it cold. Therefore, this fine straining is generally left until bottling time, as the honey must be heated then in any case to prevent granulation. This heating is often called "processing."



Left: Melting tank, designed to take a 60-lb. honey can. The cap of the honey can may be seen sticking up above the edge of the tank. Right: Lard can and water tank for "processing" honey to the required temperature. As fast as honey in can at left becomes liquid it is poured into the lard can, which when full enough is placed into the tank at right and heated quickly to the required point. Water in this tank should come about two-thirds the way up to the top of honey, thus creating circulation which makes stirring unnecessary. With the load here shown the stove should set directly on the floor.

We will assume also that the honey has granulated in the 60-lb. can. The first step is to get it liquefied, and with as little stirring and messing as possible. Get a lard can from your local grocer. If it held 50 pounds of lard it will hold around 75 pounds of honey, which is ample for the contents of a sixty-pound can. For melting honey I have a tank made about an inch larger all around than the honey can. This is not necessary. You can use a wash boiler. But the tank is convenient and costs little.

Now, it is not practical to set a can of granulated honey into a tank of hot water and leave it without stirring until all is melted. If the temperature is high enough to melt it all within a reasonable time the honey that melts first will be darkened and the flavor injured. If the temperature is low enough so that the honey is safe it will take too long for it to melt—all day, perhaps all night, too. Some stirring may be necessary if the temperature of the water gets much above 170° F., but the general idea is to pour it out into the lard can as soon as any considerable amount gets melted, then set the can back for the rest to melt.

This is a slow job if you are working only one can. You can speed up the process by having the melting tank made big enough for two cans. Thus when each of these cans is only half melted you will have your lard can full, ready to process. The work can be speeded up still more by having the melting tank made big enough for four cans.

The lard can is for processing—that is, heating to the required temperature to prevent re-granulation. Enough heat should be available so that the honey can be run up quickly to this temperature, though not so much that the water will boil. I use two burners of an ordinary oil stove. That is, it is a three-burner stove, but the cut-down oil drum which serves as a heating tank is big enough to extend over two of them.

The third burner is used for the melting tank, when only one can is to be melted in it at a time. (You can put one can to melting in each tank at first and thus get a lard can full, ready for processing, in half the time.) But if a 2-can or 4-can melting tank is used it had better go on a regular kitchen range, unless you have some kind of furnace made for it. The oil stove is too small.

With two burners of the oil stove under the processing tank, after things get warmed up the temperature of the water will stand at about 170° until the honey reaches 140°. Soon after this point is reached the temperature of the water will rise with that of the honey, keeping around 25 or 30 degrees ahead of it.

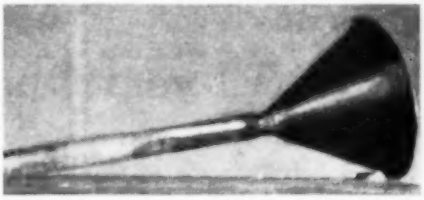
In this processing work, too, it is essential not to stir the honey any more than necessary. One advantage of using the open-top can is that you can do whatever stirring is necessary without churning the foam under, as you would in stirring the small-mouth can. But by having the water come only about two-thirds of the way up on the lard can, as soon as the honey begins to heat a natural circulation is set up, the heated honey at the sides of the can continually rising to the top where there is no heat. As the honey is warm when poured out of the cans that are melting, if the water into which the lard can is set for processing is also hot the honey begins to circulate at once and no stirring is necessary. Air bubbles rise and remain on top.

When the temperature of the honey reaches 160° F. simply lift the can out and set it on the table. Then skim off whatever foam or scum there may be on top and strain back into a clean 60-lb. can or, if the honey is to be bottled at once, into an open-top can or whatever tank you may have for that purpose.

For this straining, clip the cloth strainer over the funnel with clothespins. The strainer cloth should be wet, and the bigger the funnel the better you will get along. Let the cloth sag down about half way in the funnel.

To prevent air bubbles being carried down into the mass as the can fills you may tip the can up on edge so that the stream from the funnel will fall against the edge of the can. This gives fairly good results. A simpler way, however, is to make extensions for your funnel pipe. These are simply tin tubes into which the funnel is inserted—one for each depth container that you wish to fill—long enough to reach from the funnel to the bottom of the container, with the lower edge cut away in two or more V's to allow the honey to escape.

The honey may be strained directly into 60-pound cans, but it is not practical to strain directly into smaller containers as there is no convenient way of shutting off the stream from the strainer. If the honey is to be bottled at once, strain it first into an open top can or tank, using a funnel extension of suitable length. Then, if the can has no gate at the bottom, simply dip the honey out with a pitcher and fill your bottles and pails. By tipping the bottle so that the stream will fall against the side it can be filled nearly full without getting air bubbles into it, and the few bubbles that get in while filling it the rest of the way will soon rise and disappear. For 5 and 10 pound pails it would pay to use the extension pipe and funnel.

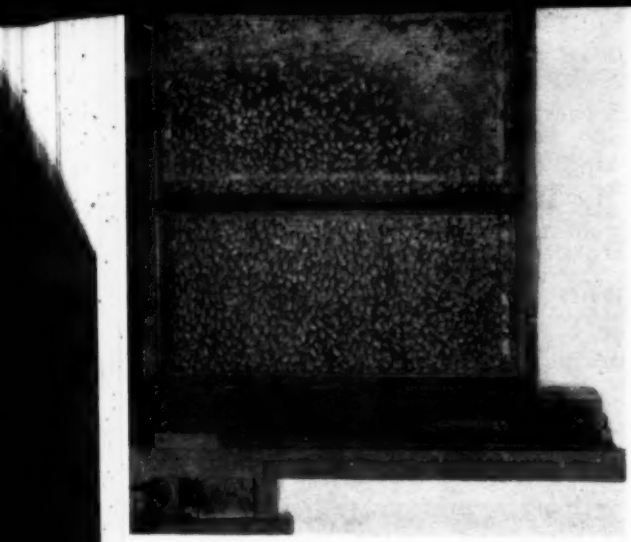


Extension tubes for the funnel, long enough to reach the bottom of the various size containers, are convenient for filling 60-pound cans and 5 and 10 pound pails with hot honey. V's cut at the lower end permit the honey to escape.

This may seem like a lot of work, but it is little if any more than is usually required for less effective methods. The results are well worth the extra effort. Putting honey up in this way you get repeat orders. The product is so good, and looks so appetizing, both in the container and as it is poured out, that people are definitely conscious of wanting more. Thus your business tends constantly to increase, even with no particular sales efforts on your part; whereas with honey less carefully packed the business would tend to decrease and you would be called upon continually for extra sales efforts in order to keep up the volume of sales. The better your pack the less salesmanship is required to sell.

Vienna, Va.

[A regular gas plate can also be used conveniently for liquefying honey.—Editor.]



An all-year observation hive with the proper ventilation results in a surprisingly light loss of bees. This photograph was taken in October when the bees were busy capping sugar syrup feed.

All-year Observation Hive

C. A. Zuppann

The Advantages of Such a Hive for Educational Purposes are Obvious

An observation hive in which bees will winter successfully is of great value to biology classes and is of interest to all beekeepers. I have had such a hive in my living room for five years and the bees are in perfect condition. The room temperature is usually 70° to 72° during the day and 9° colder at night, and there usually can be no cleansing flight from the last of November until the first part of March. My hive can easily be carried out for display purposes and is provided with a feeder which I find is absolutely essential in the fall and sometimes is needed in the spring.

It is true that the ordinary commercial observation hive is not adapted to year-round use but by using the Root observation hive as a guide, one can easily construct a hive similar to mine. If I were to make mine over again I would make it enough wider than the commercial hive to allow for double glass sides with ⅛ inch space between the panes. The hive should be made tall enough to take two standard Hoffman frames. One of these frames will hang as is usual in an observation hive, that is, back of and below the hinge on the end doors, with the bottom-bar held in metal clips to prevent swinging. The top frame should rest in notches cut in the tops of the hinged doors. Spring brass clips should be slipped over the top-bar of the lower frame into which the bottom-bar of the upper frame can be placed.

The bottom-board of the hive should extend beyond the ends about 3 inches in front and 3 to 5 inches in back and also ¾ inch on each side. Long slots about ¾ inch wide should be cut into the bottom-board directly under the frame. This bottom-board is screwed to, and forms the top of a long shallow box along the sides of which are ventilator openings covered from inside with screen cloth. The inside of this box is 1½ inches deep and it is made flush with the edges of the hive bottom-board. The bottom of the box extends ½ inch beyond the sides and ends of the box.

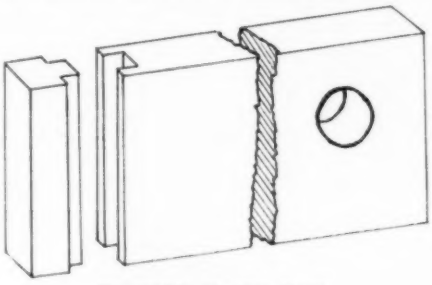
Entrance is at the Bottom

A one and one-half inch hole is bored in the bottom of the box quite near the front end. This will be the entrance. One of the side boards is notched on the lower edge directly opposite the entrance hole ⅞ inch deep and two inches wide. After the hive is assembled a metal slide can be inserted in this notch which will completely close the large entrance hole, or a piece of excluder zinc can be used if there appears to be an inclination to swarm.

The back end of this box is left open and a feeder drawer five to seven inches long is loosely fitted into it. The back of this drawer must be at least ¼ inch lower than the front and should be provided with

partitions. It should also be partly covered with screen cloth so that bees will not escape while syrup is being poured into the feeder. This drawer is suitable for fast feeding. If slow feeding is desired a hole could be bored above the drawer to hold the neck of a bottle fitted with a perforated cap.

On the bottom of the box from the inside of the entrance to the back of the feeder drawer a strip should be



Removable window block.

nailed to assist the bees in climbing into the hive proper.

After the hive is made the next problem is a tray or support to hold it. The photograph will help explain this. A rim is fastened around three edges of a board. On this rim are screwed two small cleats. The projecting edges of the hive box slide under the two cleats thus holding the hive securely but still leaving it easily removable. A 1½ inch hole is bored through this tray board directly under the hole in the hive box. On the under side of the hole in the tray is bolted a floor-plate into which will be fitted a 1½ inch street elbow.

In order that there may be a suitable outside entrance without marring the house window, make an entrance board by using a piece 5 inches wide and as thick as the window sash but lacking at least an inch of being as long as the sash is wide. Groove the end as shown in the sketch. Now make a hardwood block with a tongue to fit the groove. When the two are fitted together they should fit snugly into the sash runs. This fits under the window and is easily removed. Bore a hole into this window piece and bolt on another floor-plate. The two floor-plates are connected with a 6 inch nipple and a street elbow. All these fittings are 1½ inches. When the fittings are assembled in their proper positions, a ⅛ inch hole for cotter keys should be drilled into the fittings at both ends of the 6 inch nipple to prevent the fixture from turning. Of course, there should be no cotter key in the plate under the tray as this is the pivot on which the hive will swing.

We use storm windows and screens in season and so it is necessary to put a tunnel or tight fitting box between the window board and the screen. For outside entrance there are two ⅝ inch holes through the bottom of the screen frame but only one ⅝ inch hole through the storm sash for a winter entrance.

Many features of this hive are not original. I have heard it said that the box under the hive is essential for an all-year-round hive. I have embodied all I have read, heard or could think of to make the hive easy to manipulate and to make it successful. I might say that in my own hive I have not used double glass but will in the next one. I do keep the glass covered with panels of prest wood most of the time to exclude light.

Very Few Bees Die During Winter

The winter loss of bees is surprisingly light, a few dozen at most are carried out in the early spring. I feared that the hive and comb might become spotted from long confinement at room temperature, but this has never happened. I am annoyed some by having burr comb built against the glass. I will be more careful of my bee space next time.

On May 15 I found sealed brood from the upper bar of the top frame to the bottom-bar in the lower frame. I could have taken the hive out of doors and exchanged a frame of brood for a frame of foundation; instead, I let them make three queen cells. They swarmed June 15th after which a virgin appeared. She destroyed one cell but was kept away from the other.

The piping and quahking of these two queens could be heard throughout the house, sounding like an old hen singing. The virgin led a second swarm but these came back in the late evening without the queen. They released the imprisoned virgin which was very weak but later mated and the hive was soon normal.

The photograph shows the hive in October with the bees busy capping sugar syrup feed.

5102 Woodlawn Blvd., Minneapolis, Minn.

In Defense of Dark Honey

Mildred Ross, B.Sc. Edu.

Never Apologize for Dark Honey; Rather Make a Specialty of it.

I have been noting with interest all the recent discussions and bits of information concerning dark honey. The most outstanding characteristics, of course, are its dark color and strong flavor but there is one other honey which I have found to be equally as strong. It is a light-colored honey—so light that it appears almost white and is gathered from the blossoms of the pear tree. Aster honey is strong but usually of medium color and often mixed with the goldenrod which is a very dark honey in Ohio, as is the buckwheat.

Dark honeys are claimed by many to have a higher mineral content than others. Many beekeepers tell me that they have customers who will have no other than dark honey—the darker the better—and will wait for it rather than take the lighter flavors, while yet another beekeeper whom I know reserves his dark honey for his wife who has become so proficient in her use of it in baking that she prefers it to the milder kinds and when the supply is exhausted she will overheat a quantity of the golden liquid to endeavor to obtain that dark flavor.

Substituting Dark Honey for Molasses

If a few women have discovered the merits of the dark flavors, why cannot others be taught the same thing? They can! When these dark honeys are baked in certain foods they impart a desirable flavor which all the dark molasses we have ever bought could not supply. Many housewives keep sorghum molasses, or other brands found on the market for baking. I am thinking of one brand especially which is a very dark red. A great many homemakers feel that their larders are not complete without a can of these for soft ginger cookies, gingerbreads, and other cakes. It is merely a matter of educating those persons to the superior merits of dark honey to replace molasses.

If anyone has an idea that dark molasses is not used today in large quantities, please note that the companies making such are still operating at good profits and that the shelves in the stores and markets are still stocked with molasses. The change is so simple to effect since one merely has to substitute dark honey in those recipes for the molasses required. Usually that is the only change necessary. How long would the crop of dark honey last each year if this were done?

Let us rid our minds of any inferior feelings toward dark honey. Never, never apologize for it; rather make a specialty of it and its use, and above all, remember the added mineral content in these days when we are mineral and vitamin conscious. Right along beside my half-gallon can of clover honey in my pantry always stands a jar of the darkest honey I can find. They share equal honors on that shelf because each has its own special place in my scheme of food preparations just as both white sugar and brown are used differently in other homes. The best cooks always seek flavors of distinction and somehow I think that the idea of my cake being flavored with that lovely goldenrod honey is a positive suggestion. The gingerbread recipe which I presented in the October, 1937, issue of Gleanings has won many new customers for dark honey.* A beekeeper to whom I gave copies of this recipe has put up quarts of dark honey to go with the recipe because he receives so many calls for "that recipe and the kind of honey to make it".

Dark Honey Too Good for Car Radiators

It pains me to hear anyone telling how to use that dark or strong honey in radiators in the winter in the place of anti-freeze. Imagine it! Using inferior sweets on our tables and in our childrens' stomachs, with honey in the machinery of the old car! I am sure that you men will know what to do with your dark honey once the women have been shown its real value in honey cookery. These formulas which I present are all for dark honey. No sugar is required.

*I shall be glad to mail a copy of this recipe and also others included in the folder to anyone requesting it if a self-addressed and stamped envelope is enclosed. Address Mildred Ross, Lake Cable, Canton, Ohio.

Honey Doughnuts

One cup of dark honey, 1 cup of sweet milk, 2 well beaten eggs, 2 tablespoons lard, 5 cups of flour (measured after it is sifted), 1 teaspoonful salt, 1 teaspoonful soda, 1 teaspoonful ginger, 1 teaspoonful cinnamon and 2 teaspoons baking powder.

METHOD: Sift dry ingredients together. Mix melted lard with honey, milk and well beaten eggs. Add liquid mixture slowly to dry ingredients. Add enough flour to make a soft dough. Roll out ¼ inch thick, cut with doughnut cutter, and fry in deep, hot fat until a golden brown. Turn when doughnuts crack. Drain. If possible test the temperature of the fat. It should be 370 degrees F. for best results. This makes about 3 dozen doughnuts.

River Ginger Cakes

Three-fourths cup strong, dark honey, ⅓ cup boiling water, 1 egg, ½ cup lard, 5 cups sifted flour, 1 teaspoonful ginger, ½ teaspoonful soda and ¼ teaspoonful salt.

METHOD: Melt honey and lard together. Add boiling water to which has been added soda. Beat egg well and add to liquid. Mix or sift together the flour, salt and ginger. Combine all ingredients. Beat well. Drop by tablespoonfuls on buttered baking sheet. Do not spread the dough if thick, soft cakes are desired. Bake at 350 degrees F. about 20 minutes. Makes 18 cakes.

Southern Gingerbread

Three cups flour, ½ cup raisins, 1 teaspoonful soda, 1 teaspoonful salt, 1½ teaspoonfuls ginger, ½ teaspoonful cloves, 1 cup dark honey, 6 tablespoonfuls butter, 2 egg yolks, ¾ cup boiling water.

METHOD: Melt honey and butter together. Add hot water; then beaten egg yolks. Sift together dry ingredients. Mix all ingredients together well. Beat well. Bake in moderate oven about 35 minutes. Serve with sweet sauce or whipped cream if desirable.

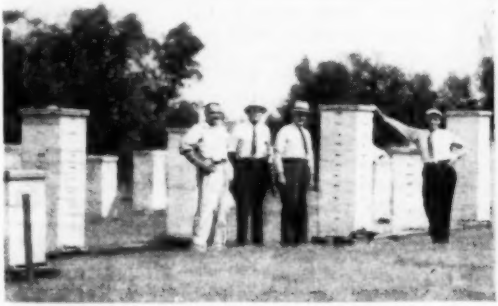
Dark Honey Fig Muffins

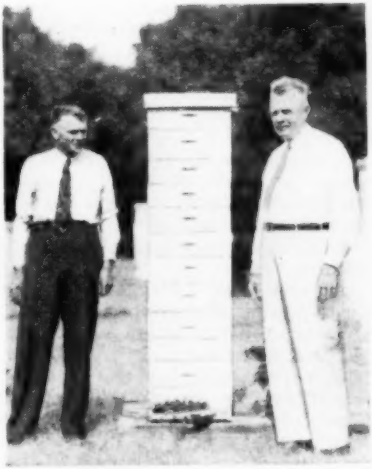
One cup of fresh, moist figs chopped, ¼ cup butter, 1 egg well beaten, ⅓ cup dark honey, 2 teaspoonfuls baking powder, ½ teaspoonful soda, ⅓ cup warm water, 1 cup sifted flour, 1 cupful of whole wheat bread crumbs, ¼ teaspoonful salt, ¼ teaspoonful each of cinnamon and ginger.

METHOD: Combine all dry ingredients except the bread crumbs. Combine all the liquids. Mix liquids slowly into dry ingredients, then stir in the figs. (You may use raisins if you like.) Stir in the bread crumbs the last thing before pouring into the muffin tins for baking. Fill muffin tins about three-fourths full and bake 17 minutes in oven at 375 degrees F. which is just a little warmer than medium oven. Be sure to use well-buttered tins to avoid burning. This makes 1 dozen medium-sized cakes. Serve hot for bread with a light meal or use cold for tea cakes.

Canton, Ohio.

(Left) L. T. Floyd, Provincial Apiarist of Manitoba, standing to the left of a hive of bees in the yard of E. H. A. Fisher, Grand Forks, N. D., at meeting held July 29, 1938.
(Right) Mr. Overbey of Bunkie, La. and E. H. A. Fisher in the Fisher Apiary, at Grand Forks, N. D., July 29, 1938.





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The Humble Bumblebee

Allen Latham

Honeybees and Bumblebees May Have a Common Ancestry

The bumblebee is of no economic value to the beekeeper but since it is distantly related to the honeybee its habits should interest any beekeeper. I say related to the honeybee because I should say that the honeybee is as near to the bumblebee as we are to the gorilla. Probably at a very distant time in the past honeybees and bumblebees were on an equal par, and it is quite possible that they have a common ancestry.

In all of its ways the bumblebee is more primitive than is the honeybee and though in some ways she resembles her more advanced cousin, the bumblebee is well called the humblebee.

Nearly fifty years ago I became interested in the bumblebee and studied its habits. I even made a little hive and placed a nest of bumblebees in it. Daily I opened up this box to watch the progress of my colony of bumblebees, and at every visit I was met with a warm reception. Though very humble the bumblebee does not tolerate interference in her life.

I watched the development of the larval bees, the changes in the nest as the season went on, the rearing of the queens and drones, the storing of the honey, etc., etc. So I came to know the life history of the bumblebee.

There are upwards of 60 species of bumblebees, or variants, in the United States, but it is safe to say that their habits are much alike and that there is more or less crossing in these different species. To put it plainly—many a species in my opinion is not well fixed, and I think many of these so-called species are simply variants of one species. I cannot say what species it was that I studied, for it was just a nest of bumblebees.

At one time I added another colony to that in the box. This was probably of another species for the two queens did not look just alike and one lot of bees had more red than the other. The two lots of bees mixed peacefully and the colony thereafter was much more populous, but the morning after the addition of the second colony one of the queens was found dead. I took her to be the one belonging to the second colony but of that I never was quite certain.

I shall not give more of the history of this colony in the box but will now give the life history of an average colony of bumblebees.

Life History of Bumblebees

In April very large bumblebees will be seen on the early blooms. These bees are all queens, and they are the only living bumblebees in that part of the world. Each of these queens roams for a few days sipping food from the flowers or buzzing about the fields or about buildings. The instinct to start a colony is now possessing them. One finds a box of feathers, another a bag of old waste of any sort, another a discarded robe, another an old mouse nest, or squirrel's nest, etc.

When once a queen finds the sort of shelter which suits her she soon starts the young family. First she gathers several loads of pollen and honey and she puts these loads into a mass the size of a large pea. On this mass she lays seven or eight eggs. These eggs are about the size of lettuce seed. She covers over the eggs with a thin film of the beebread.

In a few days the eggs hatch into small hungry grubs which at once start in to eat their surroundings. I never knew the grubs to eat through the film of food, always retaining a layer uneaten. One can see them wiggling about like youngsters hiding under a blanket. The old queen keeps adding pollen and honey, for the grubs grow with great speed. Before they reach full growth there may be other lots of eggs laid, though the queen does not lay many litters of eggs before she has seven or eight daughters to help her. I said litters of eggs, and the term is right. Unlike the honeybee and the grub of the hornet, the grub of the bumblebee does not live in a cell. Each lot of grubs lives like a litter of pigs, except that they never wander around. They always stay bunched together.

The size the grubs attain is determined not by the number of days

they grow, but by the amount of food their mother gives them. If the weather is mild and flowers numerous the grubs grow large and worker bees later emerge almost as large as their queen mother. But if the weather is cold and rainy and flowers are not yielding food the grubs are stunted and sometimes emerge not larger than house flies. Right here is where some observers have fallen down, for finding such small bees in spring in nests they have assumed that the first litters are always small, never thinking that weather had anything to do with the matter.

When the grubs have reached maturity, whatever their size, they each spin a cocoon, side by side, and each heads upward when through. Thus there is a layer of oval cocoons numbering about eight. The next litters to mature will do the same, but not starting their cocoons on just the same plane as the first their layers will be either slightly higher or slightly lower. Later in the season most of the new layers will be on a higher level, so that one can say that the nest is of several stories. In large nests the layers at the bottom may cover a space as large as a dinner plate, though such large nests are not common. In my experience I have seldom found a nest of a much larger area than my open hand. But I have seen nests with not less than four or five stories.

It will be noted that the bumblebees develop head upwards, while the honeybee lies on her back, except the queen which is head downward. Wasps and hornets develop head down.

A very practical use is made of the results of this habit of the bumblebee. As soon as a young bumblebee has left her cocoon that discarded cocoon becomes a storehouse for nectar. The bumblebee does not make cells, but uses these cups to store her sweets in.

Bumblebee Honey is Delicious

Considering the character of the storehouse the bumblebee produces a remarkably excellent honey. She will cure the honey to a thickness exceeding that of honeybee honey, and I have taken honey from a nest of these humble bees of a color and flavor which would win prizes in hot competition. It is doubly strange for the nest is filthy with vermin, every bumblebee nest being overrun with lice.

Only honey so far as I have noted is stored in the cocoons. It is quite possible that pollen is stored also, but I cannot recall finding cups of pollen. I have found in some nests great quantities of bee-bread stored in irregular columns, larger in diameter than a lead pencil, and an inch and a half long or more.

In almost every nest there will be worker bees of all sizes, those of big growth and those of stunted growth and sizes in between. If the season is favorable most of the discarded cups or cocoons will be full of honey, some unsealed and others open. The bumblebee seals a cup of honey with a thin layer of what looks just like the food round a litter of grubs, but I am inclined to think that it is merely a mixture of refuse and filth. So far as I know the bumblebee does not secrete wax, having never found any signs of any. The unsealed cups will have nectar of all densities from that almost like water to that which is very heavy. If one of the sealed cups is squeezed a gob of honey will not run out but will be pushed out, and will very slowly drop, being almost gummy in thickness.

In August a great change begins in the nest. The nest has now reached its height of prosperity and may have as much as a small cupful of honey, 100 or more inmates, and stores of pollen. The queen now lays batches of eggs designed to produce drones and queens. Those beekeepers who think that the queen honeybee does not control the sex of the egg, but is forced to lay an egg the sex of which is determined by the cell in which it is laid, should pause to think here. The queen bumblebee lays all her eggs right together with no surroundings restricting her in any way. She will lay a batch of eggs here which will all produce queens, and a batch there which will all produce drones.

According to the size of the nest the queen lays batches of eggs in keeping, at least only a number will be cared for which is in keeping with the ability of the nest. Usually there will be a score or more of queens and also of drones produced.

The worker inmates rapidly die off and by the time most of the maturely-sexed bees arrive on the scene there will be but few workers left. The young queens and drones use up

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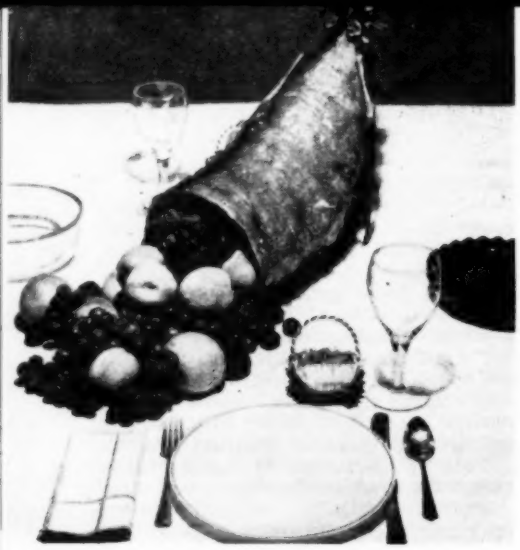


Luscious fruits of the season tumble forth from a horn-of-plenty to make an attractive centerpiece for the Thanksgiving dinner table.

For the Thanksgiving Dinner

Mrs. Benj. Nielsen

Give Humble Thanks for Nature's Finest Sweet

What did their good wives do when the Pilgrim fathers missed a shot and failed to bring down the traditional turkey for the Thanksgiving dinner? No last-minute dash to the nearest meat market for them! I imagine they did about the same as we who know no turkey will grace our tables—employed a few deft touches, unusual seasonings and especially prepared dishes, so delicious that no one missed the elusive bird. Whether or not a fat gobbler occupies the main spot in the menu, honey may be used in many grand combinations to make the Thanksgiving dinner one to remember and repeat.

Duck and goose may be made more delectable with a fruit stuffing. Mincemeat stuffing is easy to make and gives delightful flavor.

Mincemeat Stuffing

Two cups honey mincemeat, 3 cups toasted bread cubes, 1 teaspoon salt, ½ teaspoon pepper, 1 teaspoon poultry seasoning, 1 cup boiling water and ¼ cup melted butter.

Combine bread cubes, seasoning and water. Mix well. Then stir in the melted butter and mincemeat. Sufficient for a six-pound fowl.

Honey Cranberry Jelly

The jelly with its sparkling color and quivering tenderness, or baked oranges with a delicately browned meringue topping make attractive garnishes for the turkey. For the jelly, wash 4 cups of cranberries, add 2 cups of water and cook until berries are tender. Drain through cheesecloth; measure juice. Heat to boiling point and for each cup of juice, add ½ cup sugar and ¼ cup honey. Boil until liquid sheets off edge of spoon. Pour into sterilized glasses or molds.

Baked Oranges

Select firm oranges of a deep color. Wash thoroughly, cover with cold water, bring to boiling point slowly and boil 10 minutes. Drain and cover with fresh water. Boil until tender. Drain and cut off a slice of the top. Arrange oranges in a baking dish, cover with syrup made of 1 cup honey to 1½ cups water. Six oranges will require double this amount. Pour some of the syrup inside the oranges. Bake in a moderate oven, 350 degrees F. until the oranges have absorbed enough of the honey syrup to resemble candied fruit. Drain, arrange on baking sheet and top with honey meringue made by beating 2 egg whites until stiff and beating in 6 tablespoons of honey gradually. Brown in hot oven and arrange around turkey.

Boiled Tongue with Gingersnap Sauce

Cook beef tongue in sufficient boiling, salted water to cover, until tender, which will require about 2 hours. Remove tongue from liquid, skin, remove root ends and place on hot platter. Slice, allowing slices to fall on one another to overlap. Dress with the following hot sauce: Six

gingersnaps (small ones) ⅓ cup honey, 4 tablespoons vinegar, ½ teaspoon onion juice, 1 cup hot water or meat stock, ¼ cup raisins, 1 sliced lemon and ¼ cup blanched, chopped almonds. Combine ingredients, cook and beat until smooth.

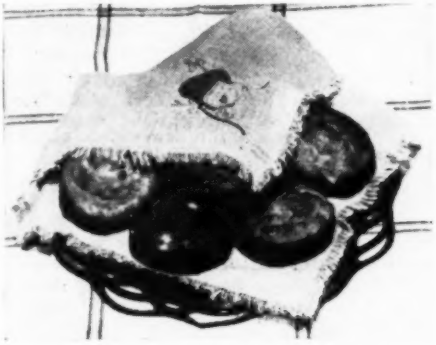
Sweet Potato Puff

Six sweet potatoes, 2 tablespoons butter, 3 tablespoons honey, ¼ teaspoon salt, and marshmallows. Cook potatoes until tender in boiling. Peel and mash. Add butter, honey and salt; mix well. Place in greased baking dish and top with whole marshmallows. Brown 20 minutes in slow oven, 300 degrees F.

Pineapple Muffins

Two cups flour, sift before measuring, 2 teaspoons baking powder, ¼ teaspoon salt, 1 egg, beaten until fluffy, ⅓ cup honey, 1 cup milk, 4 tablespoons butter, and ½ cup crushed pineapple.

Sift together the dry ingredients. Beat egg until fluffy and beat honey



Serve fruity pineapple muffins piping hot with plenty of butter and honey.

in gradually. To the flour mixture add, all at once, the liquid ingredients, melted butter and the honey and egg mixture. Stir only enough to dampen flour. Fold in pineapple. Pour the batter into greased muffin tins and bake in hot oven, 425 degrees, for 25 minutes. Serve piping hot with plenty of butter and honey.

Honey Coffee Gingerbread

One-half cup sugar, ½ cup butter, 1 egg, 1 cup honey, 2½ cups sifted flour, 1½ teaspoons soda, 1 teaspoon cinnamon, 1 teaspoon ginger, ½ teaspoon cloves, ½ teaspoon salt, ½ cup strong coffee infusion and ½ cup hot water.

Cream the sugar and butter together. Add the beaten egg, honey and the dry ingredients sifted together. Add coffee and the hot water last, beat until smooth. Bake in well-oiled shallow pans, 35 minutes, in a moderate oven, 350 degrees, F. Serve hot or cold, cut in squares and garnished with sliced pineapple "wings" and a dash of honey-sweetened whipped cream. It's grand, too, served piping hot with a generous scoop of honey vanilla or honey chocolate ice cream. You will find the recipes for both of these velvety ice creams in the August, 1938, issue of Gleanings.

Pumpkin Biscuits

Two cups sifted flour, ½ teaspoon salt, 2 teaspoons baking powder, 5 tablespoons shortening, ½ of a cup canned pumpkin, 3 tablespoons honey and 5 tablespoons milk.

Mix and sift flour, salt and baking powder. Cut in shortening. Add honey to pumpkin and mix well, then add to flour and shortening mixture. Add milk. Roll out on well floured board. Cut with biscuit cutter and place on well oiled baking sheet. Bake 15 to 20 minutes, in a hot oven, 450 degrees F.

Black Walnut Pumpkin Pie

Two cups pumpkin, canned or freshly stewed, 1 cup honey, 1 teaspoon cinnamon, 1 teaspoon mace, ½ teaspoon cloves, ½ teaspoon ginger, 2 cups milk, 3 eggs, 1 cup black walnuts, chopped.

Mix honey, pumpkin and spices thoroughly. Add the milk and beaten eggs. Mix well and add the nutmeats. Turn into pastry-lined pie plate. Bake in hot oven, 450 degrees, 10 minutes, reduce heat to 325 degrees and continue baking until done. To test for "doneness" insert a silver knife in the center, when the knife comes out clean the filling is baked sufficiently. Serve thoroughly chilled with a fluff of whipped cream, sweetened with honey and just the merest suspicion of nutmeg on each section.

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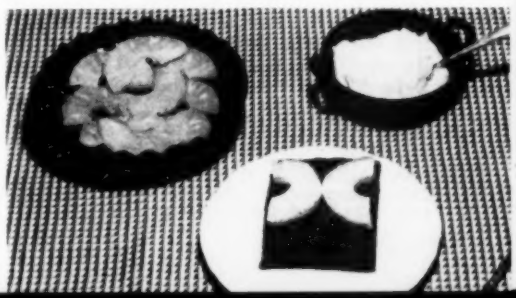

Golden brown honey coffee gingerbread is sure to win the approval of the Thanksgiving diners.

Chemical and Physical Properties of Honey*

R. E. Lothrop

Carbohydrate Research Division, Bureau of Chemistry and Soils, U. S. Department of Agriculture

There is a vast literature dealing with the chemical and physical aspects of honey but this subject has so many sides and is so scattered throughout various scientific books and journals of our own, as well as foreign countries, that it is extremely difficult, if not impossible, for beekeepers to get any adequate conception of the subject if left to these sources of information. In dealing with this subject here, an effort will be made to discuss in an understandable way those scientific principles which are important from the standpoint of the physical characteristics, as well as the chemical behavior, of honey. Special emphasis will be placed on recent knowledge and advances in the understanding of honey behavior.

Honey differs from most other saccharine products in that its characteristics vary so widely among the various types. This, in turn, of course, depends upon the floral source from which the nectar is gathered. Buckwheat honey is dark in color and possesses a very pungent aroma, whereas honey gathered from sweet clover is usually very light in color and possesses a very delicate aroma and flavor. Honey from alfalfa and the clover varieties usually granulates quite readily in contrast to tupelo and sage honey, which remain liquid for long periods of time without any tendency to crystallize. In other ways there are contrasting types and, in addition, every kind of honey has its individual flavor characteristics, so that, all in all, a tremendous variation among the different kinds of honey is shown.

Every beekeeper is, of course, familiar in a general way with these facts, but it is doubtful if he fully appreciates their extent or the importance of understanding and allowing for them. This wide variation in physical characteristics and chemical behavior of honey is both an advantage and a disadvantage. Its advantage lies in the fact that we can more nearly suit the individual tastes of consumers. Many people prefer light, mild-flavored honey. On the other hand, some prefer darker honeys of more pronounced flavor characteristics. There are many individuals who prefer buckwheat to any other honey, and consider the milder types as being insipid by comparison. On the other hand, this lack of uniformity in physical characteristics and chemical behavior must be taken into account when honey is to be used for industrial purposes. Great care and a thorough understanding of the behavior of a particular honey type is necessary for complete success in its utilization for purposes such as candy manufacture, commercial baking, ice cream manufacture, etc. In fact, the utilization of honey by these industries is distinctly handicapped by present lack of technical knowledge relative to the exact requirements, most suitable type, as well as the proper method of use for various industrial purposes.

Chemical Composition of Honey

Honey consists essentially of a water solution of three sugars, namely, dextrose (grape sugar), levulose (fruit sugar), and sucrose (cane sugar). A comparatively large number of additional substances also occur in honey but these three sugars, and in particular the first two, make up by far the greater proportion of honey. Whereas the principal characteristics and behavior of honey are due to its sugars, the minor constituents, such as flavoring compounds, color pigments, acids, etc., are largely responsible for the differences in individuality of honeys. Only minute quantities of coloring matter and flavoring substances make the difference between light and dark colored, or mild and strongly flavored, honeys. In a similar manner, only very small quantities of amino acids and similar nitrogenous components of honey increase its tendency to darken on storage, or when heated. The presence of very small quantities of protein or other colloidal substances is sufficient to greatly increase the tendency of honey to foam, or to re-

*Contribution No. 140 from the Carbohydrate Research Division, Bureau of Chemistry and Soils, U. S. Department of Agriculture.

tain finely divided air bubbles. On the other hand, the readiness with which honey granulates is determined very largely by the relative proportions of its two chief components, namely, dextrose and levulose.

The Sugars of Honey

Honey of average composition contains about 40% levulose, 34% dextrose, and between 1 and 2% sucrose. These three sugars are of very widespread occurrence in nature. The proportions of each occurring in honey vary, depending upon the floral type and also to some extent on the activity of a biological agent called "invertase". In the process of formation of honey from nectar, invertase gains access, probably from the bee, and functions as a promoting agent (called catalyst) for the changing of any cane sugar present in the nectar into its hydrolytic products, dextrose and levulose. The composition of nectar, according to the reports of various investigators, varies between rather wide limits, sometimes containing larger proportions of sucrose (cane sugar) than dextrose and levulose, and at other times more dextrose and levulose than sucrose, and always a much larger proportion of water. Regardless of the composition of the nectar, well ripened honey seldom contains more than 2% of sucrose, which is to be attributed to the action of invertase in changing sucrose into dextrose and levulose. If the invertase of honey is still quite active, that is, if it has not been weakened or destroyed by heating or other drastic treatment, it will slowly reduce any sucrose present in the honey into dextrose and levulose, so that honey after standing for some time usually has less sucrose than when freshly extracted; in some cases the sucrose content is reduced practically to zero, so that only dextrose and levulose are then present. Even if some sucrose is added to honey, it will be converted slowly into its hydrolytic products if the invertase is still active. However, there is no assurance that this will take place, so that anyone who might be tempted to use such methods to adulterate honey will very likely be caught.

As stated previously, the three sugars occurring in honey are very widely distributed in nature, usually (but not always) occurring together. Fruits of all kinds, and many vegetables and plants, contain these sugars in varying proportions. Their occurrence together is very easily accounted for because of the ease with which sucrose is changed into dextrose and levulose by the action of invertase. Under certain conditions, which as yet are comparatively little understood, invertase also may bring about a synthesis of sucrose from dextrose and levulose in certain plants. This is probably the mechanism of sucrose formation and storage in such plants as sugar cane, since it has been observed that juice from immature sugar cane contains more of the simple sugars dextrose and levulose than mature cane.

It might be explained that dextrose and levulose are known under a number of different names. Dextrose is sometimes called glucose, which is apt to be confusing, since the same term is used to designate a commercial syrup made from starch which, besides dextrose, contains another sugar, maltose, and substances called dextrins. Dextrose is also sometimes called "grape sugar" because of its occurrence in grapes. The term "dextrose" originates from the fact that this sugar rotates the plane of a ray of polarized light to the right (dextro-, or right-hand rotation) in contrast to levulose, which rotates the plane of polarized light to the left (levo-, or left-hand rotation). These directions might be better understood by stating that right-hand rotation corresponds to a clockwise direction (or a + rotation), and left-hand rotation to a counter-clockwise direction (or − rotation). The whole matter of the rotation of polarized light by sugars is discussed more fully later, since this matter is extremely important from the standpoint of honey analysis. Levulose is also known under the name of "fructose" or "fruit sugar".

These sugars are sometimes referred to as simple sugars, or monosaccharides, since they represent the simplest sugars that can be obtained from more complex parent substances called polysaccharides by degradation processes. They belong also to a class of sugars called "reducing sugars" because of their ability to reduce certain metallic salts in solution to an insoluble form. An alkaline solution of copper sulphate, for example, which is deep blue in color, is reduced to a brick red insoluble form when boiled for a few

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George Rea Knows His Bees

Mary G. Phillips

For 30 Years George Has Expounded the Gospel of Better Beekeeping

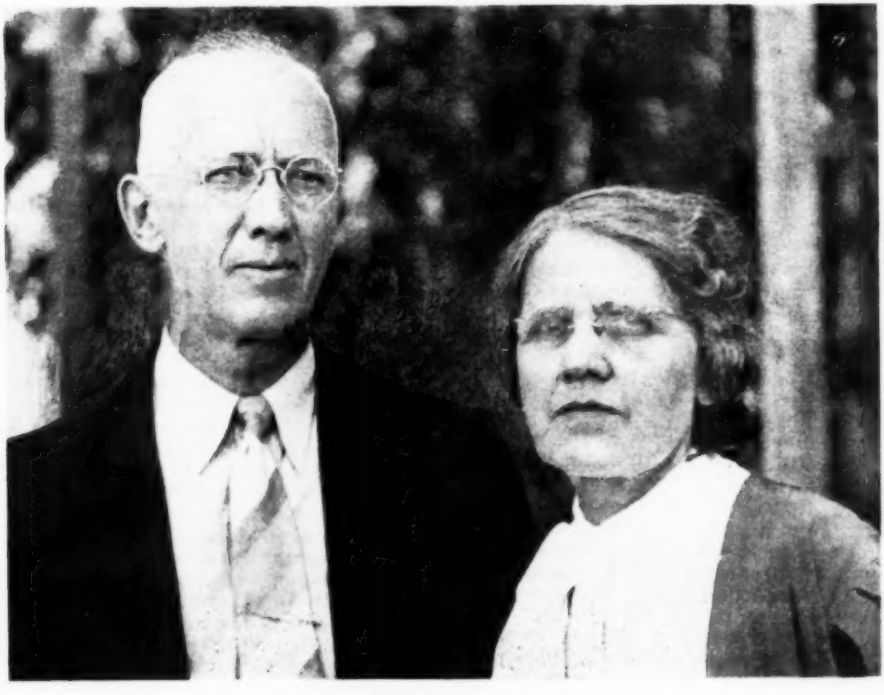
"Who is that man with the big voice and the nice smile?" asked a woman at the New York State Beekeepers' Association meeting.

Her neighbor replied, "Why, I thought everybody in New York State knew George—that's George Rea, the extension man at Cornell."

George Rea may not be known to quite everybody in New York, but he certainly is known and loved by every beekeeper, and he has an enviable reputation throughout the country for his knowledge of bees and beekeeping. He would have an even wider reputation were it not that his chief characteristic, aside from his booming laugh and wide smile, is modesty; he never blows his own horn, but lets results speak for themselves. And what results he gets!

George's lifework is that of helping others to help themselves in his role as extension specialist in beekeeping at Cornell University. To accomplish this aim, which is that of all agricultural extension workers, a man must not only know his subject-matter thoroughly, but he must to able to present it so persuasively to closed minds that they become receptive to new ideas, and he must have a winning personality so that he is able to make friends among the beekeepers whom he desires to help.

No man in the country is better qualified to do extension work than George Rea. He was the first man in the United States to be appointed on a permanent basis in beekeeping extension work; he was the first bee inspector in Pennsylvania; the first extension specialist both in Pennsylvania and New York; and he has been working continuously in ex-



Mr. and Mrs. George H. Rea.

George Rea examining colonies before packing for winter.

tension for 22 years, and has been in public work in beekeeping for almost 30 years.

George has a scientific mind and he knows bee behavior which motivates all good beekeeping practice. He says of his scientific background, "What I know about the science of bee behavior, I owe to Dr. E. F. Phillips. I remember meeting him for the first time in 1906, when he was the vice president of the Pennsylvania State Beekeepers' Association organized the year before. Phillips astounded me by saying, 'Rea, do you know what—bees don't hibernate.' I had to go down to Washington then and find out what that man was doing. I began learning from him the groundwork of scientific beekeeping, and I've been at it ever since."

George Rea's background has fitted him well for his life-work. His earliest recollection, when he could not have been more than three years old, is of his white-bearded great-grandfather, a German, working in his garden in northwestern Pennsylvania. There about a hundred straw skeps were ranged on shelves against the stone wall surrounding the neat beds where flowers, herbs, and vegetables flourished under the loving care of this aged man. George still has one of the old straw skeps made by his great grandfather.

When George was about fourteen, he used to watch his Aunt Sophia handle vicious black bees in box hives, and one day, the bee-woman, in the usual gloves and bee-veil, was hiving a swarm hanging in the corner of a fence rail, while George, close by, watched. Suddenly he was attacked, and ran for dear life to the meadow, but he was badly stung before he was rid of the wild beasts. He says he made up his mind that day to find out what went on in a bee-hive, and the next spring he bought a box hive full of black bees from his aunt.

George's beekeeping experience took him through the ravages of the epidemics of foulbrood of the late nineties. He had "black", now known as European, foulbrood, and he went through all the hardships a bee-man can suffer as his colonies dwindled to two or three. But George did not lose his interest. The Division of Apiculture of the Bureau of Entomology at Washington was trying to help the beekeeping industry, and beekeepers themselves were beginning to organize a fight to wipe out contagious diseases of bees and save the industry. George attended the second annual meeting of the Pennsylvania State Beekeepers' Association in 1906, was put on the legislative committee, and that year went to Harrisburg to plead for the passage of bills that would help beekeeping. In 1907, an inspection bill was passed, but without an appropriation to back it up. That, however, did not deter George. He inspected bees in his own

George Rea shows the queen to a beekeeper from Palestine, Miss Dvorah Wagner at a meeting in Schenectady County.

The two-story hives are put together to be covered with shavings and slaters' felt. The super is full of honey, empty comb in the hive below.

county at his own expense, for he was convinced that every diseased colony was a menace to every other, and all must be located and destroyed or treated. Then, when an appropriation was made in 1909, George Rea became the first bee inspector, even though he and his father did not belong to the political party then in power at the state capitol. At the same time, he carried on the work in his own large apiary and kept in touch with every new development in beekeeping, and science touching upon it.

Visits Beekeepers in Model-T Ford

In 1916, he was called to Washington by E. F. Phillips, then in charge of the bee culture laboratory of the Bureau of Entomology, for Dr. Phillips recognized Rea's special qualifications for extension work. George was sent to North Carolina, the first man to be appointed on a permanent basis for this kind of missionary work. George went home and put his affairs in order and then drove back from Reynoldsville to Washington in his open model-T Ford over roads not one of which was paved. Dr. Phillips, who was scornful of automobiles in those days, said:

"What are you going to do with that thing, George?"

"I thought I'd use it driving around to apiaries in North Carolina. You can't always reach beekeepers by railroad and it's a nuisance to have to be met by some beeman with a horse and buggy."

"Well, the roads will be terrible. Automobiles are not much use—you'd better stick to trains."

Two hives packed for winter. Note the entrances where lath is nailed on to hold the packing in. Chaff or shavings fill the space between hive and ground. The method of tying is George Rea's idea.

George Rea's daughter in their Reacroft apiary. This seven-story hive is typical of his beekeeping.

But George knew his Ford. It was not his first car—that had been a Buick in 1909, with acetelyne and kerosene lamps and wooden wheels—so he persisted, and in the end Dr. Phillips and he went down town to the Bureau of Entomology to see whether the expenses of an automobile could be put on a government expense account. It was irregular, but it was finally decided that George might try it and if the government refused to pay, it would be his loss. Although no records can be found to prove it, this was probably the first time in extension history that a man connected with the U. S. Bureau of Entomology used his car officially as a means of reaching rural people. The roads in North Carolina were all but impassable, but

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From the Field of Experience

TWO BEE-MOVING EXPERIENCES

D. B. Thomas

For forty years I yearned to go South, especially in winter. Two years ago calamity brought the opportunity. And I liked the going but not the reason for going.

My destination was about thirty miles east of Austin, Texas. Roses and a few other flowers bloomed nearly all winter. I soon found a roving fisherman who practically gave me two hives of bees in apple boxes which I transferred in January. Other hives were purchased and transferred until I had fourteen. All had to be fed until April when yopon came into bloom fairly dripping with nectar and their transformation into strong, rich colonies was rapid and complete, in fact, too much so for my purpose, which was carrying them nearly a thousand miles North, home with me.

But I screened them in, twelve hives in a Ford coupe, and made my get-a-way on April 15, one sunny day in an 85° temperature. By noon a ten-frame hive running over with bees and full of green honey, was baking and soon went down. The next best colony soon followed and the prospect looked sorry.

Night came and as I do not fancy night driving on a great thoroughfare at my age, I stopped. Next day was cooler, and the third day cooler yet.

Well, on arriving home I still had some bees left, so I hurried to set them out and let them fly. Two colonies had perished and two or three more were damaged.

It looked mighty bleak after leaving the South where the wheat was heading out, coming into a region where the timber buds were not even starting to swell. But diamond flowers were and had been in bloom for some time and in an hour those bees were carrying pollen and came along fine.

By this time I had some first-hand experience which ought to help, so in the autumn of '37 I started out to try it over. The season of 1936 was a hard one on bees in that immediate locality so I had to go to the woods and cut bee trees. Some fun—if you enjoy it, but no profit. The spring of '38 started very unfavorably and I had to feed until I got away about April 18, with colonies far from strong and very light in stores.

About the usual progress coming North allowed me to set these bees out on the third day seemingly no worse for their confinement and trip.

The experience so far would teach me to not have hives crowded with bees or honey,—especially green honey in new combs.

Hartville, Mo.

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WILD HONEY

Wm. H. Hargett

One day, in a crowded restaurant, I was placed at a table already occupied by two women, neither of whom I knew. One of them, while reading the menu, remarked about the deliciousness of the honey-meringue pudding which, apparently, she had eaten there before. Her friend replied that she often made honey meringue at home and that she got her honey from a farmer uncle. Whenever I am in public places I usually resign myself to psychic deafness, but this particular subject made me prick up my ears.

As the discussion broadened, one of the women remarked that wild honey is always of better quality; that it is not only thicker, but more delicately flavored. I have known several beekeepers in various walks of life, and I have eaten a lot of honey in my time; I have taken honey from bee trees and modern hives; I am aware of the various shades of color and flavor in honey from light to dark, from mild to strong; I am keenly aware of the gentle and mean dispositions of the many species and breeds of bees; but this was the first time I ever heard of honey falling under the two classifications of wild and domestic. I had always been under the impression that it was the nectar and not the bees' housing facilities that determined the quality of honey.

I therefore concluded that this good woman was under the illusion that honey produced in a hollow tree by so-called wild bees, was different from honey produced in modern hives by "domestic" bees. I felt it

my duty to correct this error, and apologetically asked her, more for an opening wedge to conversation than to have my apparent curiosity appeased, "What is the difference between wild honey and any other kind?"

"Oh", she replied, "wild honey comes from trees while other honey comes from clover."

Not wishing to become further involved in a situation that would apparently become more complex, I merely said "I have often wondered about that."

St. Louis, Mo.

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A SNUG PACKING CASE

D. L. Woodward

Mr. Edward C. Cowan of Vestal, N. Y., builds winter cases using beveled siding on the outside and burlap on the inside. The space between the siding and the burlap is four inches and this space is filled with leaves which remain there permanently. The front panel which you see standing in front of the hive at the right is the only removable part of the case and is attached to the front by four screws after the case has been placed in position about the hive. This front panel is made like the rest of the case with burlap tacked on four sides and stuffed with leaves. After the front has been placed in position a bag of leaves is placed on top, the case being built that much higher than the hive to permit the bag of leaves to be placed under the cover on top of the hive.

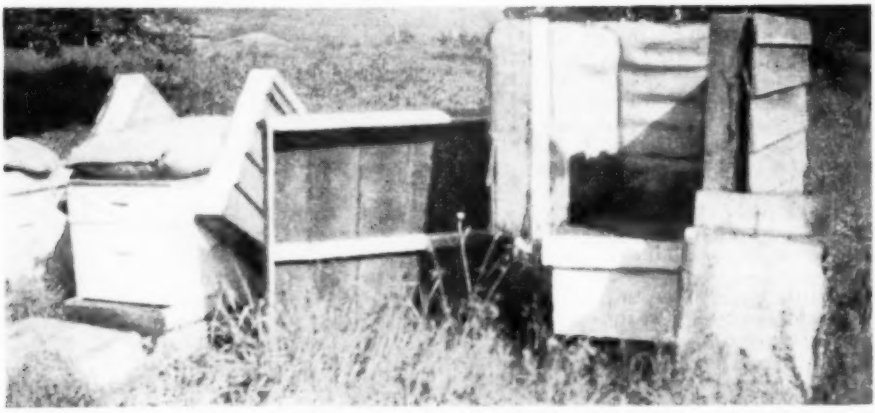
Mr. Cowan places his winter case on the ground, but I would suggest a hive stand the size of the winter case made in box form and open on the bottom. This could be packed with leaves also which would prevent the dampness from the ground coming in direct contact with the hive.

The front panel should be the same width as sides and back, and a small slot cut in at the bottom and a boxed entrance inserted tightly against the entrance of the hive. No bees can then crawl in between the hive and the winter case, and snow and ice is prevented from accumulating around the entrance of the hive.

When I called to inspect Mr. Cowan's bees the latter part of May he had not unpacked them yet, but said he would go right at it so I could inspect them. He had thirteen colonies and by the time I had inspected two colonies he had the rest all unpacked and the cases back out of my way. I may be slow, but I thought it the quickest and easiest unpacking I had ever seen. A colony can be packed for winter in ten minutes and unpacked in the spring in from three to five minutes.

I would suggest using Celotex as an outside cover instead of siding as it would be both warmer and lighter to handle. Also the case could be hinged at the two back corners so that they would fold up in a more compact form for storing them during the summer.

A good way to protect Celotex from the weather when used in this way is to make a mixture of one part building sand to one part Portland cement. Mix thoroughly while dry then dilute dry skimmed milk,



Burlap and siding form the winter packing case, with four inches between for packing. The front panel is removable.

(such as is used for chickens) with water, and use in place of water for mixing sand and cement. Mix to consistency of paint, then apply with brush broom, brushing it in to the Celotex until the grain is well filled. This gives a stucco effect and protects the celotex from the weather.

The empty packing case is set on top of one hive to give a better view of its construction. In the position on the hive at the left the case is in position to place about the hive.

Clarksville, N. Y.

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A FEW USEFUL TRICKS OF THE TRADE

M. L. Weeks

Here are a few tricks that may prove useful to some beemen: Linoleum makes a very good inner cover. I use two pieces; one with a hole to take a feeder can, to look through at a queen cage when introducing a new queen, and to let drones out of the upper story. The linoleum does not come off with a bang as does a wooden cover, and when replaced after being turned up in the sun seals itself air tight with warm propolis.

When straining honey, have the cloth slant just enough to cause the honey to run to a central point where a string or cord is attached extending to the bottom of the container. The honey will run down the cord without the usual wavy motion which makes more bubbles; this is very useful when honey has to run any distance.

For small beekeepers who use jars given to them by generous neighbors, take the cardboard out of the lid and replace with a white disk of paper over which is poured an eighth inch of melted paraffin. When the paraffin is hard screw on jar of honey which seals the jar neatly and cleanly. The old cardboard inside of the lid is usually musty and contains the odor of the previous contents of the jar.

Also during the swarming season I keep several queen cages, each attached to a branch to which is attached a foot or two of heavy pliable wire. When a swarm issues the queen is put in the cage and the branch hung by the wire where the swarm will cluster on it. Then hang the swarm in a convenient cool place. They will stay thus for several hours while a hive is being prepared or the queen cells are cut out, there being only a few bees on the frames to hide the queen cells. I have handled as many as three swarms at one time this way.

Belvedere, Cal.

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USE PLENTY OF SMOKE

H. Vaughn Shoemaker

In the Asked and Answered columns on page 582 of the September issue, I do not believe your answer has completely solved L. Leslie White's problem.

I believe that the real solution of his problem is to use more smoke. He states that he puffs a little smoke over the frames in the lower hive body before he removes the frames for examination but does not say anything about using more as needed. Judging from his description of the way the bees react, I am led to believe that he does not use any more smoke after he commences to manipulate the frames, or at least not until the bees have become so riled up that it is difficult to subdue them. On days when bees are gentle, it is quite possible to manipulate them with only a puff or two of smoke at the beginning of the operation and especially is this true of the Caucasian bees. However, I find that with the usual Italian colony in a strong condition, and frequently with Caucasians also, many puffs of smoke given at intervals are needed in most cases. Occasionally, there will be a strong and very populous colony which will be so cross as to require almost a continuous dense cloud of smoke during manipulations in order to manage them at all.

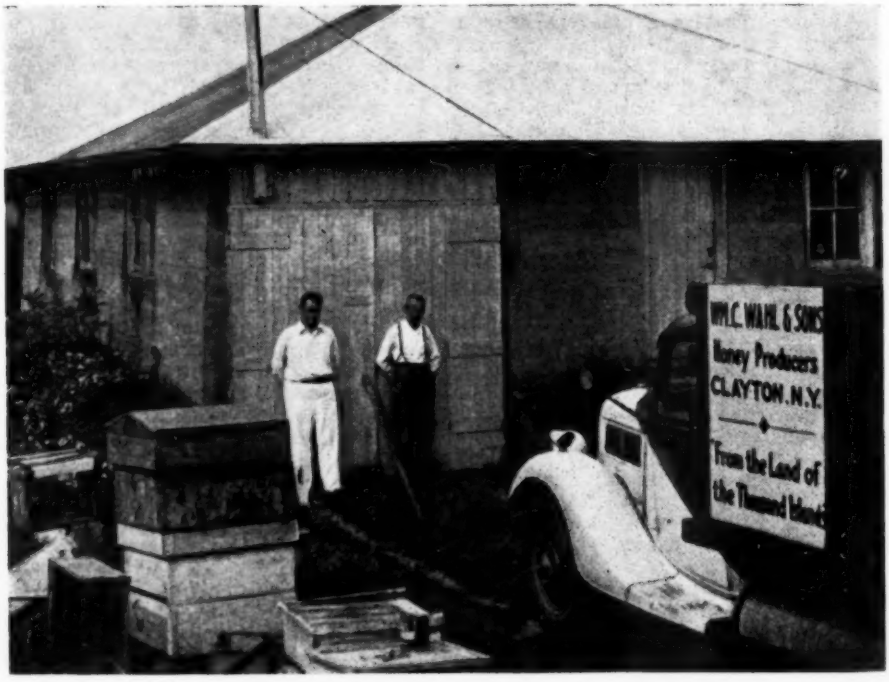
It pays to keep one's smoker handy and always ready to use. I find that the handiest place for me to keep the smoker is between my knees, holding it by the bellows. It is always in reach during manipulations, to be used at the first sign of the bees becoming cross. When worker bees stick their heads up between the top-bars and wait for the beekeeper to make a move, it is time for a puff or two of smoke if he wishes to keep from getting stung. However, one should refrain from using too much smoke, especially when searching for a queen. Too much smoke will make her nervous and cause her to run around on the frames, thereby making her hard to find.

Bryant, Ind.

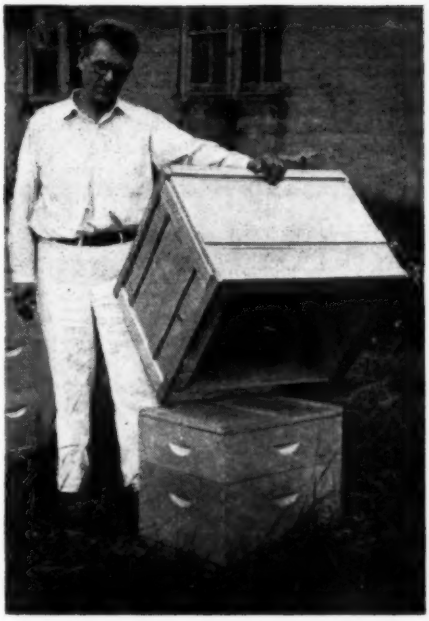
Beekeeping in St. Lawrence County, N. Y.

H. H. Root

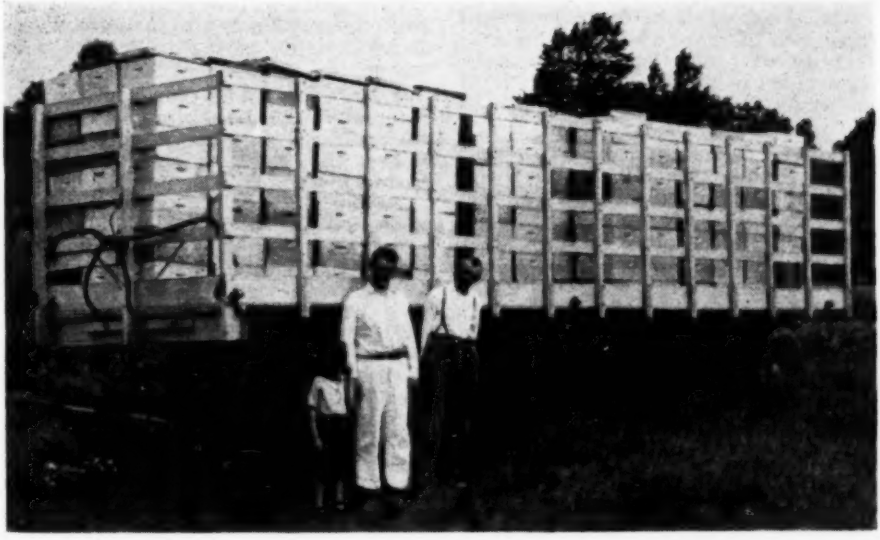
William C. Wahl & Sons, Arthur and Wilburt, formerly of Williamsville, New York, own a few acres joining the St. Lawrence River, west of Clayton, N. Y. They operate a series of out-apiaries from which the honey is all trucked back to the home yard and extracted in a large, two-story, concrete extracting house.



The Wahl honey house is built on a side hill. The extractors, super storage, etc., are in the upper floor, here shown. The ground on the other side slopes sharply down. Since moving North to the St. Lawrence River, they have built two fine brick homes and a third for their father, William C. Wahl, is under construction. The elder Wahl has been a contractor and builder and his experience in that line has helped the younger men in their building operations.



The Wahls use a single hive winter case of their own construction, large enough to hold a shallow food chamber, without which they do not attempt to winter any of their bees. This packed rim is easily and quickly applied with a minimum of labor and ample protection is afforded.



The Wahl brothers have practiced migratory beekeeping extensively; they built an enormous trailer to hold 300 colonies of bees, using a steel I-beam construction with a stake body amply strong to carry the load. This is probably the largest truck ever made especially for hauling bees. They have made several trips South with bees. In this connection see the article by Wilburt Wahl in Gleanings for November 1937, describing their experiences before and after the new trailer was built.

APIARY AIDES

The Observer

Cooperation is all right, but with restrictions. A few years back a group of small beekeepers purchased a cooperative extracting outfit. Each one's crop was quickly and easily extracted. Everything went fine—until AFB began to show up in each of the beekeepers' yards. The inspector was called in. He quickly diagnosed the trouble. Spores of AFB from one of the beekeepers' yards was quickly and thoroughly spread by means of the cooperative equipment. The beekeepers "cleaned up" and returned to their original smaller sized equipment. Yes, slower, but safer.

* * * * *

To those who retail honey: Clean off the container with a damp cloth (no matter if it does look clean) just before you hand it to a customer. The amount of added luster given to the container is surprising. If one has used pails they can be cleaned better with fine steel wool moistened with water. Yes, neatness is essential in successful selling. . . I know of a case where tourists, attracted by the white hives of a beekeeper, would drive into his yard to buy some honey only to hastily drive out again after viewing the filthy condition of his honey house.

* * * * *

A device for ridding the extracting room of bees is easily made. Bees brought inside eventually fly to the windows and crowd upward on the screen as long as there is light; then they will wander to the corners of the screen. We put a hole in the screen near one of the top corners and fastened over it a Cone-shaped piece of screen, small end out. At least one such escape should be on each window.

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WHAT ABOUT BEEKEEPING THRILLS YOU MOST

Bro. Stephen Babek

If I were asked the same question without having read Mr. Grant D. Morse's article on page 210 in April, 1937 Gleanings, I would almost duplicate his words. But there are a few other thrills in beekeeping which I would like to add, some of which only an enthusiastic beginner has time and patience for.

I like to watch the bees promenade around a virgin queen at the entrance about to take her first flight. The bees seem to congratulate her and wish her a successful trip and safe return. I enjoy seeing the queen return and the bees rush into the hive after her.

I like to smell the perfume at the entrance of a hive during a honey flow and try to guess what honey plants the bees are working on. To watch the bees rush in with their loads of various colors of pollen is an almost untiring spectacle. When I take out a comb of brood and find the queen laying, I take a long breath of contentment. When the thunder claps on a warm summer day, I rush to the bees (if I am near) and watch their frightened home-coming. I get a big kick out of this. At the undesirable swarming season I enjoy having a fifteen-pound swarm. In the evening I allow the tired field bees to light on my hands so as to contemplate their human-like behavior.

I sleep in the honey house, which is near the bees. Before retiring I often take a stroll around the hives once more to smell the fragrant odor emanating from them. Yes, were it convenient and practical, I would enjoy sleeping on top of a beehive, so I could listen to the lulling hum in my sleep.

I believe that if one takes a real interest in the behavior of bees, the main objective of beekeeping, that is, honey in the cans, will naturally materialize.

Subiaco, Ark.

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COMMENTS ON CURRENT ITEMS

J. F. Dunn

The question of the practicability of the long-idea hive, or the "new idea" as it was at first called, keeps bobbing up serenely every little while. See page 650, October Gleanings. The illustrations that I have seen invariably show the supers tiered up in the center of the hive.

Shortly after the idea was given to the public the writer made up a number of them, several long enough to take 20 combs but more long enough horizontally to hold 30. Those hives always contained rousing colonies. We used no queen zinc in the big brood chamber and the bees had the range of all the combs.

We filled up the blank space with full-depth extracting frames and after leaving plenty for wintering we either extracted the honey from them or used them for wintering nuclei.

The 30-Comb Brood Chamber

Here is where our management differed from those I have known: We put queen excluders over the brood chamber, starting with one shallow extracting super in the center, adding another when it was partly filled. As soon as the bees had stored considerable honey in the top super we "jumped" it over to the right or left section and kept jumping the supers to each end of the hive when the condition required it. The bees in those hives never failed to take care of the side supers ripening and capping the honey. I am describing the 30-comb brood chamber. When the extra supers were pretty well filled we added more. As far as we know, none of the 30-frame hives showed the slightest inclination to swarm and but one of the 20's.

The reader will understand that this was just one of my many experiments. I had adopted the light double-walled cork-packed hive and wishing to have all my hives of one pattern I gave them (except a few that we sold) away. Not, however, until I operated them long enough to know they had many advantages and much less hard work.

Shot Towers

At that time alsike clover seed brought a big price and many farmers did not cut the clover until the seed had matured. On making a survey we found we were pretty sure of from 600 to 1000 acres of alsike within a radius of three miles. Our hives were tiered up so high we called them shot towers. We had to use a high bench about 16 inches wide and 4 feet long to rest the supers on, and a high step-ladder to put on or take off the supers from our regular hives, while we could handle those long hives from the ground and in half the time. If we had used the center of the hive for tiering they would have been very little better than the ten-frame hives, many of which we rebuilt into double-walled ones.

Bees Take Hives With Them

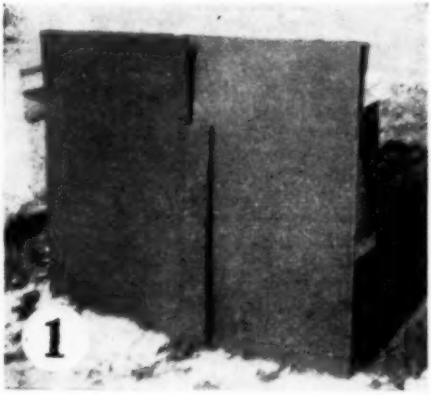
The article by Sigurd Biorness giving his experience in the hill country of Jerusalem was very interesting. It made me think of Mr. Baldensperger, "Father Baldens" to his many friends. While acting as chairman on banquet night at one of the yearly meetings of our Ontario Beekeepers' Association in the King Edward Hotel, in introducing "Father Baldens" who, in spite of his German name, is a 100 per cent Frenchman, I told his famous story about how he side-tracked the Turkish tax-gatherers, who, discovering his very large apiary in Palestine, called, demanding a large sum of money saying "surely such an important industry should be taxed." When he replied that he had never paid taxes, one of them held out a hand and said, "Oh! a donation would be acceptable." He said, "Well, call day after tomorrow and I may be able to talk to you." Feeling sure of the "baksheesh" they agreed. His foreman was a Syrian and Mr. Baldensperger asked if he knew of a secluded location to which the apiary could be removed. He replied, "Yes, Excellency. Just over the Lebanon range of mountains I know a glen where those grafters would never find them. I can get camels enough to take the whole equipment there and we would be safe." Before daylight of the second morning the bees and all the equipment had been taken away and the Syrian foreman was on the old location to meet the tax-gatherers. Of course, the question was asked, "Where are those bees." He blandly answered, "Why they all swarmed." The reply was "Nonsense, not only have the bees disappeared but the hives and everything are gone." The old foreman replied "Well, you see his Excellency, the owner, is a very clever man; he has trained his bees to swarm and to take the hives along too, sometimes many miles away." When the officers demanded that he tell where they had gone he, of course lied, like a good old Oriental gentleman declaring that he did not know. The sequel is that the new location was never discovered.

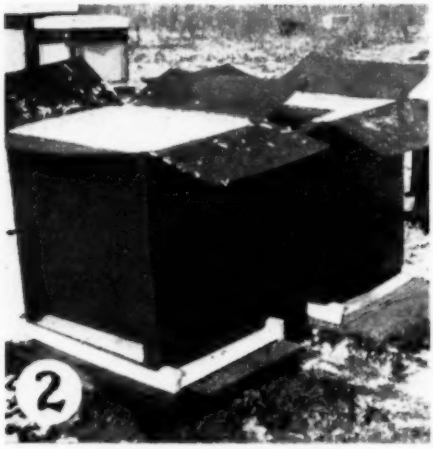
The last we heard of the good old "Father Baldens" he was operating large apiaries in the French Alps during the summer and wintering at his residence in the city of Nice, France. Mr. "Baldens" was much amused and said to me at the close of the meeting. "Mr. Dunn you told the story just right."

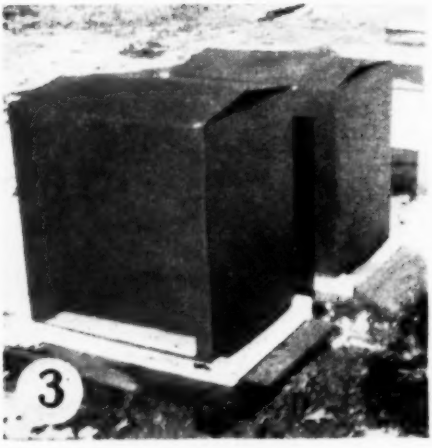
Ridgeway, Ont.

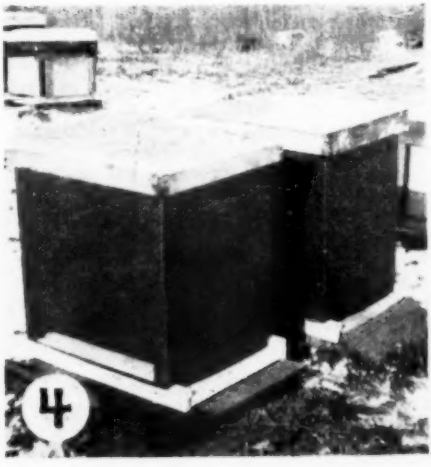
A Simple and Economical Winter Case

Fred Gould









No. 1. Shows this economical winter case in the flat.

Nos. 2, 3 and 4 show how it goes on hive except they do not show the lath behind the hive that holds the case on. A single story colony may be wintered by putting an empty hive body on top to be filled with leaves or straw. Two one-story colonies, one above the other, can be wintered by cutting an entrance in the inner cover and through the paper. When a two story colony is put into this case there is one inch space for sawdust above the inner cover. This case is made of corrugated paper saturated with a soft asphalt, and should last several years. The time saved in labor will pay for this case. The time required to pack is about two minutes per colony. One half minute is required to unpack. Storage space is cut to the minimum.

If feeding is necessary the cover can be removed and a shallow empty super and feeder can put in. To unpack just pull two nails. Take hold of the cover and the case lifts off. The same cover is used as in summer.

Holland, Ohio.

[One advantage of this case is that it can be folded up and put away when not in use during the summer months. The tendency at present is towards less packing than was recommended some years ago. This means less cumbersome packing cases, less packing material and less labor in packing. Possibly the very populous colonies now-a-days require somewhat less packing.—Editor.]

Editorials

Utah Sets Example in Honey Consumption In October, 1938, Gleanings, on page 634, the correspondent for Utah mentions the fact that the consumption of honey in that state is 6½ pounds per capita. If the people in all the states consumed that much there would be an under-production of honey. In 1936, the total production for the U. S. A. was 177,000,000 pounds, a little over one pound for each of the 130,000,000 people in this country. Utah sets a good example in honey consumption.

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Top Entrances, A Suggestion If, during midwinter, beekeepers in the North will examine the packing material on top of some of their colonies, they may be surprised to find how wet it is. This moisture freezes during very cold weather, and frozen packing material is worse than no packing. One remedy is to make a small opening at or near the top of the hive. A half-inch auger hole is bored through the hand-hole of the food chamber or near the top of a single-story hive.

The chief value of the top entrance is to allow the moisture to escape, and to give ventilation if bottom entrance is clogged with dead bees or ice. In this connection, we do not advocate the use of a top entrance without a small one at the bottom.

Between forty and fifty years ago there was considerable discussion concerning upward ventilation. Some advocated sealed covers, the bees sealing the super covers down with bee glue, early in the fall. It was then argued to let the moisture accumulate and run down at the sides, but later practices, especially in cold climates, seem to advocate upward ventilation with a means for the moisture to escape through an opening, as described. In any case, the beekeeper should err in having the top opening too small rather than too large. For further discussion see Confab, page 713.

Excessive moisture within hives is due mainly to the lack of adequate protection in the way of insulation for hives and windbreaks for apiaries. When the temperature within the hive surrounding the cluster of bees becomes too cold condensation takes place. Ample protection prevents excessive moisture within hives.

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Longevity and Its Relation to Honey In the book, "Honey and Health" by Dr. Bodog F. Beck, referred to in several earlier issues, John Anderson, lecturer on beekeeping at the University of Aberdeen, Scotland, is quoted as saying, "There is nothing in the world that can beat honey as an aid to defy old age. Keep bees and eat honey if you want to live long. Beekeepers live longer than anybody else." Dr. Beck mentions Francis Huber, L. L. Langstroth, Dr. C. C. Miller, A. I. Root, Charles Dadant, Thomas William Cowan, and he might have mentioned the late C. P. Dadant, all of whom attained the eighties and nineties, and all of whom used honey in preference to sugar. The Senior Editor, as some of our readers well know, banished sugar from his table thirty years ago. He has reached the age of seventy-six, and says he may round out the century, arriving at the age when old men think in terms of the past, get childish, and sometimes silly, but he'll keep on eating honey just the same.

Elsewhere in his book, Dr. Beck gives a list of men who have lived to be over a hundred years old. One reached the ripe old age of one hundred and fifty-two. These people lived a quiet life, but honey and milk formed important items of their food.

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Late Aster Honey Flow in Ohio It seems that the small white aster is becoming more plentiful in certain regions of Ohio of late years. Furthermore, warm weather appears to be running later into the fall months than it did some years ago. While statistics may not bear out this later assumption we do know that for the third consecutive season bees have stored some surplus from aster in the vicinity of Medina.

Some fifteen years ago when sugar syrup feeding was in vogue we started feeding heavily on October 1,

when brood rearing was practically suspended for the season. At the present time, October 10, strong colonies have considerable brood, also some drones.

We do not greatly object to late aster honey provided the weather is warm enough to permit the bees to ripen it. If, however, the weather turns cold immediately following the aster flow, the honey may not be ripened properly, and may ferment, and this in turn may cause dysentery and poor wintering.

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Heating Honey With the Cappings

Josh Billings once said, "What's the use of knowing so much when so much you know aint so". Years ago from 1910 to almost the present time the author of the A B C and X Y Z of Bee Culture described various capping melters that received the cappings with the honey and allowed the two to run through hot coils into a receiving tank. We admitted that the process darkened the honey but we then thought not enough to damage it. We now know from reports from the field and from our own experience that this is a costly mistake. As was pointed out in our last issue, page 612, this always darkens the honey, impairs the flavor, and of course brings down the price of honey. In a private letter, Dr. E. F. Phillips, Professor of Apiculture at Cornell University, expressed himself on this point as follows: As we have obtained his permission to publish it, we present it herewith:

In spite of all that has been said and written, beekeepers still insist on heating honey in the honey house. I am led to mention this by the fact that I have just learned that one of the large beekeepers of this State has injured most of his white honey crop this year by allowing honey from a capping melter to run in with the honey from the extractor. At a conservative estimate, he has reduced the money price of his honey at least one cent per pound, and for him that means a terrific loss. It all comes from a failure to realize the danger inherent in such use of a capping melter. One would not go far wrong in stating that honey heated in a honey house is always reduced in value, for if the color is not increased, some flavor is lost. In the use of the capping melter, the beekeeper excuses himself by thinking that if a relatively small amount of honey is scorched by the capping melter, the damage is covered up when that honey runs into the main lot, and that seems to me bad reasoning.

I am not at all opposed to the heating of honey under properly controlled conditions, and the reason why I have spoken against heating honey in the honey house is because I have never yet seen a heating arrangement in a honey house that can properly control this heating. By heating honey to about 160° F. for ten minutes, no harm can be done, but when honey is run while hot into a large tank, or even into a 60-pound tin, heat is retained by the honey to such an extent that the honey is damaged seriously. To heat honey under melted wax and in contact with cocoons seems impossible without serious damage to the honey.

It is too late to do much about this for the present year, for tons of honey have been ruined beyond repair, but perhaps if we keep hammering on this subject year after year, it may finally be possible to drive home the truth that heating honey is about the most dangerous thing that a beekeeper does to his product. It might be a good idea to paste a large red label on every capping melter to warn purchasers against allowing honey from the melter to run in with good honey. Perhaps better still, the honey on cappings might be saved in a safer manner, thus avoiding spoiling any of it.

There is no special point to this letter except to relieve my mind. I confess that it provokes me to see an innocent beekeeper reduce the value of his crop seriously because of some bad advice which has been given him and which he has unquestioningly accepted as sound. We all know that much honey is reduced in value because of what some beekeepers and some bottlers do to it, and I suspect that it will take years to remedy such conditions. All that we can do is to hammer away.

It is "penny wise and pound foolish" to cut down the market price of our honey, because it saves time to melt the cappings with the free honey as fast as they come from the machine or knife. It takes a little more time and labor to drain this honey or extract it by centrifugal force and then melt the cappings almost free from honey.

The price of honey is low enough now without depressing it further. Buyers are already beginning to send in their protests against accepting honey into which has been mixed honey that is melted with the cappings.

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Cyanogas Causes Death of Ohio Beekeeper

Since the warning issued editorially in the October Gleanings on the use of calcium cyanide, or what is commonly called Cyanogas, the following letter which further emphasizes the dangers in using this chemical has been received from Chas. A. Reese, State Apiarist for Ohio:

I could not help but read with a great deal of interest, your editorial appearing on page 633 of October, 1938 Gleanings, warning against the use of calcium cyanide.

I regret to report that one of our younger beekeepers, Otho Netzley, of Greenville, Ohio, met his death on September 13 while fumigating his super combs with Cyanogas. Mr. Netzley had gone into his barn toward evening and apparently had opened up a window in the loft and applied the calcium cyanide, as he was found lying on top of the supers with the can closed, and it was apparent that he was trying to reach the windows to either

close them or get air. This was a rather severe blow to the beekeeping interests of Darke County, as he was one of the coming young beekeepers and had 216 colonies. A few years ago he worked with us as an inspector. While in the Department he had been repeatedly cautioned as to the hazards of Cyanogas but evidently took one long chance and the results were as above stated.

I think a further caution on the use of Cyanogas in the fumigation of combs should be called to the attention of beekeepers. It so happened that this particular day Netzley was gassed was one of extremely high humidity which would naturally result in quicker action of the material, and possibly for that reason he was caught unexpectedly.

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Ample Stores and Winter Protection for Bees

We call attention once more to the three major requirements for the wintering of bees, (1) very populous colonies consisting mainly of young vigorous bees, (2) an ample amount of stores of good quality for each colony and (3) adequate protection against the elements.

George H. Rea in the monthly bulletin entitled "Beekeeping News", put out by the New York State College of Agriculture cooperating with the County Farm Bureau writes the following:

Protection from cold is provided by a wind break of hills, trees or properly constructed fences and the insulation of the hive itself. Bees exposed to severe winter winds cannot winter well. Enough insulation of the hive on the bottom, sides and top is absolutely necessary to conserve the energy of the bees so that they may have the vitality to produce a new generation of bees to take their place next spring. Dysentery and spring dwindling are caused mainly by the lack of insulation; old bees and poor stores are contributing factors, also.

Leave a hive-body full of honey on each colony, thus making it two-story for winter and spring, and leave in the honey house ten extra combs full of honey for each five colonies, to be used for extra food next spring.

Some years ago, before the food chamber came into rather general use, we advocated using a shallow extracting super as a food chamber. During normal seasons, especially in regions where there is a good fall honey flow, the shallow food chamber usually meets requirements. We have found, however, that the deep food chamber is preferable, especially in regions where there is practically no fall honey flow.

During the recent drouth years we found that colonies occupying deep food-chamber hives survived the drouth, while some colonies in shallow food-chamber hives had to be fed. We found also that deep food-chamber colonies have an adequate supply of food in the spring, for early brood rearing, which is so important for securing the maximum crop of surplus honey.

It is to be noted that George Rea goes one better,—he advocates saving out ten extra combs full of honey for each five colonies, which would be two extra combs for each colony, to be used in the spring when needed—this in addition to a deep food-chamber of honey for each colony. During a spring such as we had this last season, when bees were unable to fly during periods of protracted cool weather, such full combs of honey would come in handy.

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Bee Sting Fatality Reports Grossly Exaggerated

There have appeared of late a number of newspaper reports of persons who have died as a result of bee stings. Newspaper reporters are out for news, and, in the case of bee stings, the reporters may not take time to investigate the authenticity of such reports. Newspapers are naturally interested in publishing unusual items in order to capture the interest of the reading public.

A letter dated Sept. 30, 1938, from Dr. Bodog F. Beck, 116 East 58th St., New York City, author of "Bee Venom Therapy" and "Honey and Health" contains the following comments which are of unusual interest:

Maybe you noticed that lately several reports were published of fatal accidents with bee stings. In the "Time" magazine (Aug. 15th), it is mentioned that twenty people died alone in New England in 1936. I wrote a letter to the Board of Health of the Commonwealth of Massachusetts and I was informed that they have no records which would justify such a statement. They even referred the matter to the State Department of Agriculture of Massachusetts, and Dr. Burton N. Gates, Chief Inspector of Apiaries, has written me that he seriously doubts the truth of such statements.

Another report (New York Times, September 3) says that a farmer, Floyd Stevens, was stung by a bee and died a half hour later from the injury. I wrote to the Watkins Glen Health Board asking for full details of the case. Dr. Rollin G. Baker of Montour Falls, New York, reported to me that the above-named farmer was picking peaches and was stung by a hornet and not by a bee. Any time similar reports are published, I always investigate most carefully and find that it was not a bee.

Only some time ago there was another report in New York Times that a man in Natick, Massachusetts, was stung by a bee and died. In this case it was likewise established that a man stepped in a wasps' nest and died from the injuries. The doctor even reported to me that the type of wasp was submitted to Dr. Dow of the Museum of Natural History in Boston and proved to be a **Vespula maculata L.** In due time I shall call the public's attention to the matter, especially after I collect sufficient material.

From North, East, West and South

NORTHERN CALIFORNIA, October 2.

Weather: The season changes. Here in the Bay region we have had our first rain. As soon as that comes our beekeepers are reminded that their New Year is at hand. Farther north they have had more rain—in the mountains still more. The rain is the turning point of the season. The fields may be covered with flowers and the bees working full time, the rain comes and it is all over. This was such a general rain the beekeepers will soon have their bees in winter quarters. At an elevation of 7000 to 8000 feet the first snow has fallen.

Now that the 1938 honey crop is in the can, beekeepers are looking for winter locations where their bees will be ready for the early flow in the spring. Here in the Bay region we are favored by an early flow of eucalyptus and many bees are moved in. The number will not likely be as great as last year. We seldom have a big crop two years in succession. Last year was a big year for eucalyptus so we look for a smaller one in 1939.

Honey Crop: The honey crop of 1938 is anything but satisfactory. The reports coming to the office of the State Association show that some beekeepers got none while others got a good crop. One reports 60 pounds of eucalyptus, 30 in lima beans, and 10 in wild flowers of the mountains. Another reports 20 pounds in blue curl. Still another reports 10 pounds in alfalfa, 40 in lima beans, and 10 in spikeweed. In star thistle the average is not far from 50 pounds. Some beekeepers were lucky enough to keep their bees in good condition for the entire season.

Now is the time to plan for 1939. See that there is an abundance of young bees, an abundance of room, good locations for winter, good food and plenty of it. The up-to-date beekeeper will have all of these and if he does, he may expect to start right for 1939.

Market: The honey market is far from being encouraging to beekeepers, the result being an increased interest on the part of producers to further reduce the cost of production.

Miscellaneous: The discussions of beekeepers at the fall meetings show an increased interest in fundamental beekeeping practices—what the other fellow does to control swarming, how he manipulates his supers, how he handles his honey crop from the time it is produced until it is canned.

From what we learned at these meetings we could easily come to the conclusion that the program of our coming convention should be centered about discussions—not simply lectures—but discussions between different beekeepers of the many fundamental practices now being used by successful beekeepers, and in addition, plans for small cooperatives in various parts of the state. The beekeepers of California believe in organization and cooperation.—Cary W. Hartman, Oakland, Calif.

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SOUTHERN CALIFORNIA, October 3.

Weather: Yes our "Indian Summer" as it was called when I was a boy is still going strong in Southern California, Clear, somewhat cooler days, with a little of that feeling of fall is in the air. During the past month we have been entertained with thunder and lightning that reached cloud-burst proportions in some parts of the mountains. In a few instances rain fell in the valley districts lying near the foot of the mountains. At our mountain cabin two and one half inches of rain fell within a few hours while ten miles away the ground was dry. Usually about this time we begin to hear the weather prophets predicting as to the likelihood of our having a wet or a dry winter. So far as we know they are silent and perhaps it is just as well. We will take it as it comes and not be disappointed.

Honey Crop: The 1938 crop is in the cans and in many instances, especially among the small producers, has been sold. We feel that the man with a carload or more is likely to hold when the price is low than the man with a few tons. Perhaps this is on account of his figuring what that honey crop represents in labor and expense.

With the above average rainfall of the past two seasons, honey plants are in good condition for the coming year. Rainfall, as we sometimes think, is not a sure prediction for honey as was proven the past season in many of our

white sage and buckwheat ranges where a very light crop was secured.

Market: There is a little more demand for honey. The market is a little stronger than last month. We feel that the honey price has hit bottom and the future looks brighter.

Beeswax: Prices remain around 18 or 19 cents. Only a few months ago some beekeepers sold for 23 cents. Why this fluctuating we are unable to say. Last season we were offered 24 cents in the winter, why not again?

Miscellaneous: Bears, as mentioned by my friend Hartman, brings to mind my boyhood days when a Mr. Levering would drive over the Siskiyou Mountains from Scotts Valley in Northern California to the Rogue River Valley in Southern Oregon. Mr. Levering would peddle his honey crop and in his wagon along with his comb honey, he would have several colonies of bees in the old style Langstroth portico hives. When asked if the bears bothered him he said, "No, you see I have my bees all on platforms built around trees and about eight feet from the ground. When I want to work with them I use a ladder to get up and down. I have the bears fooled. They might smell the honey but they cannot get to the hives."

Some thirty-odd years ago we harvested a few tons of what proved to be almost pure horehound honey. In fact, it would have made good horehound drops as compared with those we buy in stores today. We have kept a sample and while it is granulated and seems darker still it retains a strong horehound flavor. Never in all the years since then have the conditions been such as to repeat; in fact, we do not see nearly so much horehound as we did when the sheep roamed over most of our bee ranges. They say, and quite truly we believe, that the sheep carry in their wool many of the seeds of our obnoxious weeds and shrubs and scatter them over the country. We wonder if other beekeepers have had similar experiences.

We sometimes get awfully hot out here in California, but we are not in it with Paul Cutts of Alabama. See page 640, last issue.—L. L. Andrews, Corona, Calif.

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BRITISH COLUMBIA, October 6.

Weather: The season now drawing to a close will go on record with us as a dry summer. Even coastal districts with average rainfall of over fifty inches per annum suffered from a shortage of moisture which had the effect of reducing the honey crop.

In the dry belt of the Interior practically no rain fell until August, but alfalfa and sweet clover yielded well and results during July and August seemed to lend weight to the contention that heat, and plenty of it, is necessary for a good yield of nectar from these plants, which are our chief source of nectar here in the Interior.

Honey Crop: The total honey crop will exceed 791 tons, over 1½ million pounds, with an average per colony production of 75 lbs. This is a record for the Province, the nearest to it being 756 tons in 1935.

The crop was more even in the various districts than any previous year, being fair to good even in the poorest locations due, no doubt, to the long summer of continuous fine warm weather that was unusual for the coast districts of the Lower Mainland.

This is helped by the fact that having no buckwheat or inferior sources of honey in the fall we are able to leave the crop on the hives until the end of the season.

The honey exhibits in the honey section of the Canadian Pacific Exhibition at Vancouver, August 29 to September 6, attracted a good deal of attention with approximately five tons of honey on display in the various classes. Chief honors fell to F. Bettschen of Vernon with first in the 300-pound commercial class, and gold medal certificate for highest quality award.

Miscellaneous: A puzzling but very welcome feature of the past season has been the almost entire absence of wasps.

In some seasons these are a real pest to us, especially where colonies have been weakened by spray poisoning late in the season and weaker colonies are robbed out to the last ounce of honey.—G. F. Pearcey, Kelowna, B. C.

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TEXAS, October 1.

Weather: September weather was normal for most of Texas. Small honey flows from cotton and composites were reported from the northeastern part of the state. In some localities light flows from rock brush and white brush occurred. All reports from beekeepers would indicate that all bees are in good condition and ready to go into winter quarters with a fair amount of stores. The same reports indicate that considerable honey still remains in the hands of the producers. They, however, are holding this for an increase in prices. This is confirmed by

the constant inquiries for sources of purchasable honey. The price asked by the producer is generally the price which the retailer receives which makes it impossible for the honey assembler to buy.

The drouth has curtailed any general honey flow for the autumn; however, in certain sections flows from white brush and evergreen sumac are reported.

Miscellaneous: The last week in the month the writer visited the Trans-Pecos section of Texas and because of the rains which had fallen in that section, was able to clear up quite a number of questions relative to the sources of honey there. The honey flow was from the common white brush *(Lippia ligustrina)* and from *(Lippia Wrightii)* A. Gray. *Lippia Wrightii* is very similar to *Lippia ligustrina*, but occurs more abundantly and according to the few beekeepers the plant blooms through a longer period of time. Rock brush was also being abundantly visited by bees. Various composites of the genus Eupatorium were likewise being visited by the bees. Honey flows are reported to be heavy but of short duration. Two beekeepers reported averages between 150 and 200 pounds, their apiaries being scattered over several hundred miles of territory. The writer was very much interested in seeing numerous honeybees collecting both pollen and nectar from Eupatorium species in the Chisos Mountains at Boott Springs. This location has an approximate altitude of 6635 feet. Goat herders camping there report that "bee nests" are very common through the Chisos Mountains. These consist of clusters of comb hanging over shelves of projecting rock.—H. B. Parks, San Antonio, Texas.

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IOWA, October 7.

Weather: Conditions have continued to be unusual. August was extremely dry, but was followed in early September by heavy rains. It looks as though this condition would cut short the flow from Hubam but the cold weather which followed the rains was probably enough to precipitate killing frosts so the Hubam revived and continued to yield exceptional amounts of honey until it was necessary to cut the plant on October 1. At that time there was a continued bloom and yield, but where seed was desired it was necessary to cut since the plant was beginning to shed the early seed which had been formed prior to the rainy period.

Honey Plants: There has been an increased interest among beekeepers in the matter of legumes which are being planted in their localities and there has been an increased interest on the part of those growing legumes in the matter of pollination by bees. Many widespread examples of cooperation in this respect have been reported this year.

Demonstrations conducted with Hubam again this year indicate the value of bees in close proximity of the field to be pollinated. A field reasonably isolated so that a minimum of bees were able to visit the field showed a seed set of approximately 1 bushel per acre. A field where the bees had unlimited access showed the returns of 2¼ bushels per acre. Part of this seed crop was lost due to shattering of early set seed.

Interest in the possibility of new and better legumes is being centered around the honey test plant gardens at Atlantic. This work is in the immediate supervision of Frank C. Pellett in cooperation with Iowa State College. Many different varieties of clovers and related legumes have been under observation there this year. The most promising for future use in agriculture is the Kent wild clover and a new biennial sweet clover which has been called Alpha sweet clover because of the type of fine growth and annual white sweet clover comparable to Hubam which shows an exceptionally fine growth. This plant also set a big crop this season. The bloom occurred at a time when there was very little else available for the bees to gather from and they made the best of this source of nectar.

Honey Crop: The honey crop of Iowa has turned out as the crop of a good many other states. A larger area enjoyed a honey flow this year than has been the case for several years. The yield over much of this territory was not as large as the yield in some of the especially favored locations last year. The flow of former years has been rather small per day over a long period of time and large daily gains this year upset the reasoning in forecasting the crop at an early date. One factor which has been consistently overlooked is the reduced number of units which are being operated for honey production. This reduction has come about with the downfall of agriculture and is naturally going to build up slowly following the rehabilitation of agriculture through the increased use of legumes. Other conditions have been such that it has been exceedingly difficult to get underway with the proposed

legume program. Most of the expansion in units operated has been in the hands of the so-called commercial producers who have consistently expanded their operations during the last three years.

Miscellaneous: There is a growing question on the part of producers as to the advisability of depending upon package bees to make up all of their winter loss or to take care of all the desired expansion of operations. Colonies which have been well wintered are capable of producing increase and scattered demonstrations indicate that this home-made increase is just as satisfactory as packages and in some instances more satisfactory. Emphasis is being given this line of thought due to the present low prices offered for honey and the proposed standard prices for package bees for 1939.—F. B. Paddock, Ames, Iowa.

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MICHIGAN, October 8.

Honey Crop: The state as a whole did not have a bumper crop as reported earlier. In southern Michigan and central Michigan, the crop was above average but in the Thumb and northern Michigan the crop was below that of 1936. The quality, flavor and body of the honey is excellent.

Weather conditions prevented a fall honey flow, and those who removed all honey at extracting time will need to feed.

Market: The market slumped badly due to the dumping of distress lots early in the fall. This has checked recently and the market is somewhat firmer.

Miscellaneous: Over 100 honey producers met at East Lansing on September 22 to discuss means of improving honey marketing in Michigan. A committee was selected to study the problems and recommend relief. The committee met and called a meeting of all interested producers for October 26 when proposals for promoting honey uses and for handling surplus or distress lots will be presented.

Retail prices have dropped 25% to 40%.

The Surplus Commodities Corporation is studying the honey situation in Michigan and may act to relieve the situation.

A new building for teaching and experimental work in apiculture is being constructed at Michigan State College.—R. H. Kelty, East Lansing, Mich.

NEBRASKA, October 7.

Weather: Nebraska has had plenty of rain this year but at the wrong times. Plenty of spring rains resulted in rank vegetation growth. A bumper wheat crop seemed likely. Then a sudden heat wave shriveled the ripening heads, in some cases so badly that fields were not harvested. Again came abundant rains and corn never looked better. Two weeks of strong hot winds, in the latter part of July, took the corn crop, except in the favored southeastern section. Sweet clover, that grand old standby, came through all varieties of weather. Little rainfall was recorded during August and September, none so far in October. No killing frosts are reported to date. On the contrary, 96 degree weather, on October 3, set an all time heat record for October.

Honey Flow: Yellow sweet clover began blooming May 20, earlier than usual. Due to a cold rainy, backward spring, colonies were weak. Bees generally were not in condition to begin storing surplus. In some cases bees were starving when moved to clover fields in late May. Consequently, bees built up on yellow clover flow, securing some surplus and some from white sweet clover. Fields of the white variety were hard to find.

Honey Crop: The honey crop in Nebraska is conspicuous by its absence. Only those beekeepers who practiced "intensive migratory beekeeping" got any surplus honey, and these were rewarded with very little in exchange for much back strain. "Intensive migratory beekeeping" is that type of beekeeping characterized by frequent moving.

Honey Market: Honey sales are slow, prices firm to a shade lower. It has some stiff competition in widely advertised syrup, which retails at 49 cents per ten-pound pail, against honey at $1.15. In an area so sorely tried by repeated crop failures, honey is in the super luxury class.

Honey Plants: So far honey plants are in fair condition but rain is needed soon.

Miscellaneous: The grasshopper damage was not as bad this year as was anticipated. Cool, rainy weather retarded the hopper hatch giving sweet clover a chance and furnishing much else for the hoppers to eat. More sweet clover is being planted. However, the tendency seems to favor the yellow variety, which is about two weeks earlier than the white variety. This is good for early flow but

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white sweet clover blooms over a much longer period.

Despite the pessimistic trend of these notes, we plan to invest in more bees again next spring, hoping to come out a bit on the credit side—something we have not done for several years past.—Benj. Nielsen, Aurora, Nebr.

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PENNSYLVANIA, October 3.

Seasonal Conditions: The production of honey for this state is about twice that of last year. The yield of clover honey in the limestone valleys was considerably below the expected crop. The flow was curtailed materially because of dry weather. In addition, a large amount of honey was removed from the supers and used for brood rearing during the latter part of the summer. As a result the brood chambers were nearly devoid of honey by September 20. In some colonies bees were actually suffering for lack of food. The fall flow from white asters has been good during the last of September and early October. This flow has been a life-saver to many beekeepers since it will reduce materially the amount of feeding required this fall. The quality of the late honey is not too good and dysentery may become a serious problem if we have a long hard winter. The feeding of thick sugar syrup can be resorted to as a corrective measure to prevent loss from dysentery.

Black and Yellow Bees: Colonies of black and yellow bees showed a marked difference this fall in respect to the amount of honey in brood chambers. The black bees had several full frames of honey while yellow bees in most instances had almost no honey in the brood chamber. This difference has seldom been as noticeable as it was during the last of September. Most of the bees in Pennsylvania are yellow or Italian bees so that most of them were light at that time.

Honey Flow: The northern half of Pennsylvania fared much better because of a greater rainfall which kept clover yielding for a long period of time. The clover was followed by a heavy buckwheat flow. The flow was heavy for the entire buckwheat area.

Miscellaneous: I should like to say a word about honey for babies. We have raised five, the last one was fed honey in his milk instead of some other sweet. Much to our comfort he has shown the most consistant gains of any and has been the least troublesome. We are indeed sorry that honey was not used as a sweetening for all of them during their first year.—E. J. Anderson, State College, Pa.

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KANSAS, October 8.

Weather: After having quite a comfortable summer with sufficient moisture through July, the weather changed to hot, dry conditions of the past drouth years. There was no rainfall from sometime during the latter part of July until the middle of August, when a rain broke the drouth. In the vicinity of Manhattan, this rainfall amounted to four inches in a 24-hour period. From then until October 6 there were only light showers which measured only about one-fourth of an inch for September and through to this date. At this time a substantial rain relieved the dry conditions temporarily. An unusual early light frost occurred on the mornings of September 19 and 20. Following this cool period the weather has been warm for this time of the year, with maximum temperatures ranging between 80° and 98° F.

Honey Crop: The honey crop produced in central Kansas was only about one-eighth of a normal crop. In northeastern Kansas it was about three-fourths of normal conditions. In southeast and south-central Kansas, the best crop of honey in 10 to 12 years was harvested. Many beekeepers removed between 100 to 200 pounds of surplus extracted honey per colony. The honey was primarily from white sweet clover. Following the cessation of the white sweet clover honey flow, there have been other minor honey flows continuing up to the present time. This honey produced in southeastern and south-central Kansas is of good quality and light in color.

Market: At the present time the sale of honey is moving at a slow to fair rate, with many of the beekeepers trying to maintain their prices of 1937. About the middle of July, one beekeeper made a contract to sell his entire crop of honey which was produced in south-central Kansas.

Prospects: As a general rule, where the honey has been left on the colonies until this date, they have been carrying on brood-rearing actively and colonies are in fine condition to go into winter. It is hoped that the beekeepers will leave sufficient honey on their colonies to insure

active spring brood-rearing through the month of May.

Miscellaneous: A serious situation arose last spring for many beekeepers in the east-central part of this state (Kansas River Valley). A nine months' drouth began about the last of August in 1937 and continued through until the first week in May for this area. It was so dry that none of the spring plants secreted any nectar. Pollen was abundant early in the spring but during the latter part of the spring it became scarce. Under these conditions, colonies used up their stores in a rapid manner during the latter part of April and the first part of May. After the first week of May they still continued to use stores in large amounts, due to the fact that more or less continuous rains came for the remaining three weeks of the month. More than twice the normal rainfall for that month came in that time. Colonies which were not fed during the latter part of April and May died, due to starvation. This removed hundreds of colonies from the Kansas River area due to the neglect of the beekeepers.

Within a short time plans will be laid for a one day beekeepers' program to be held at the Kansas State College during Farm and Home Week the first week of February, 1939.—R. L. Parker, Manhattan, Kansas.

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SASKATCHEWAN, October 12.

Weather: The weather was favorable throughout the Province during the spring and bees built up well. June was a particularly favorable month. The honey flow opened in early July, and most bees were in good condition to take advantage of it at that time. July weather was good and a strong flow continued to the end of the month. Although July was dry, this did not seem to affect the flow. August continued dry and the flow shut off early in the month. During the second week of August rains came and the weather became too cool for nectar secretion. The weather turned warm again in September but plants did not yield until towards the end of the month. The total crop for the Province was fair. In the north very good returns were secured but in the south the average per colony yield would not better 65 pounds.

Market: The market was clear of honey when the new crop came on and the price was good. New offerings were soon priced lower, however, and the market is down somewhat at the present time. It is down lower than there is justification for as there is no large surplus of honey this year. After the first few nervous sellers are clear of their stocks it is likely that the price will strengthen slightly.

Miscellaneous: Package bees developed exceptionally well this year and it is a pleasure to see how most shippers are getting their bees through so successfully. A very noticeable thing is the fact that queens are coming through more uniformly each year, and we do not find so many weak colonies or so many very strong ones. This uniformity results in greatly simplified operations. One or two shippers sending to this province this year did not have such good results. Many of their queens were superseded late in June or at the worst possible time. Some queens which were not superseded, should have been. Apparently they were just good enough to get by and that is all. Package shippers can still put more attention on their queen breeding. Bees from one shipper sending to this Province were outstanding in freedom from supersedure. This breeder has made the most improvement in his stock in the last four or five years. This shows that results can be secured in a relatively short time and are therefore well worth attempting.—R. M. Pugh, Regina, Sask.

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ONTARIO, October 7.

Weather: This is a beautiful fall day. Bright and clear following a cool night with light frost—typical of much weather we get here at this season of the year.

The weather for the past month here in central Ontario has been normal with no bad storms or other extremes like some other places unfortunately have had. Buckwheat flow stopped abruptly about August 20, just when the bloom was at its best, and as a result we found the crop much shorter than anticipated a month ago.

Crop: Differences in soils have a tremendous influence in determining buckwheat yields, but this year the difference has been more pronounced than ever. We usually have quite an acreage of buckwheat and the soil is a heavy clay loam. Here the colonies did not store more than 25 pounds per colony on the average. In another township but a few

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miles away where three apiaries are situated the soil is quite light and sandy. Those colonies stored an average of 75 pounds per colony or a bit more. At another apiary of 100 colonies where soil is mixed with limestone, the yield was well over 100 pounds per colony. Where the 25 pounds per colony yield was stored the acreage of buckwheat was just as great as at the other locations.

Yesterday we finished extracting the buckwheat, and October 6 is the latest date that we have ever had to complete this work. We have started feeding and hope to do this work in a hurry. It is not such a big job as some would think as with over a thousand feeder pails, we feed two apiaries each day that weather permits, no matter what they need.

Market: As to market conditions little can be added to what we have said in late issues of Gleanings. Our own crop is all sold except a small amount kept for retail purposes, and the price received, while lower than last year, is fairly satisfactory. A number of beekeepers got panicky earlier in the season and sold their honey at too low a price and this distress honey on the market has held things back a bit.

Miscellaneous: Consumption of honey, locally at least, has been very heavy. It is surprising how a bit of personal advertising will boost honey sales. For over 25 years the writer has used honey on cereals and of course he has passed this information on to many purchasers of honey. This year at least a half dozen people when buying honey in large quantities jocularly stated that I was responsible for the fact that they had to pay out more money for honey than formerly, as now they are using honey on cereal, fresh fruits, etc., instead of sugar.

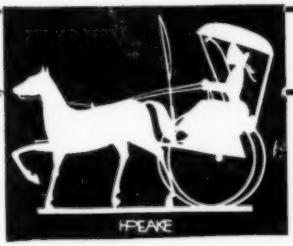
Another thing that is helping honey is the fast spreading truth that honey is anti-diabetic. Just last week a party telephoned me to leave a hundred pounds of our best honey at their home as a brother, a professional man in Toronto, was coming out to the local fair and wanted the honey. When I delivered the honey I asked the lady what her brother did with so much honey as I happen to know he has a very small family and that they had bought honey from us earlier in the season. She replied, "Why, he dare not eat a bit of sugar and he uses honey for all sweetening in drink as well as food."

Just a few days ago we shipped a car of honey to Great Britain and when paying the freight charges, we were amazed at the queer things that go with railway transportation. Of course, marine freights are always very low as compared to land transportation. We can send a carload of honey to England or other European ports much cheaper than we could send the same load to inland points not so very far away and yet hundreds of cars are lying idly on sidings and we are paying railway deficits of huge amounts each year.

In Gleanings, page 633, Mr. L. T. Floyd speaks of the danger of using Cyanogas and then extracting the honey from combs that have come in contact with the powder after the gas has disappeared. While one would not want to have any of this powder get in the honey yet even if it did there would be no danger whatever, I believe. Every year we use a large amount in our honey house after clover honey is extracted as we usually have several hundred supers of combs that are not needed for buckwheat flow. While our honey house has storage room for honey in the basement and the honey in tanks is separated from the room above where combs are stored, yet we did not feel like taking any chances of the gas affecting honey in open tanks in the basement. Accordingly I took the matter up with chemists and they assured me that after the gas has generated when the powder comes in contact with the air, that the residue is absolutely inert—just plain lime, if I remember correctly. I knew of one of Ontario's best-known beekeepers who used to take the stuff with them to an outyard and after loading the honey, if there were many robbers in the supers, he put some Cyanogas under the tarpaulin that covered the honey, to kill all the robber bees. While I would not care to follow that practice yet there would be no danger so far as injuring the honey is concerned.

Dates for the Ontario Beekeepers' Association are set I understand for Nov. 22, 23 and 24, and meetings are to be held as usual at the King Edward Hotel, Toronto. How time does fly! It seems but such a short time since we met there last. No matter whether crops are good or bad a good attendance is always assured and this year with a fairly good crop nearly everywhere in the Province, no doubt there will be a big crowd. Of course, we look for a good representation from "over the line" and while I am not an official any more of this Association, yet I feel that they will not accuse me of presumption when I give one and all a hearty invitation to "come over and see us." We will be looking for you.—J. L. Byer, Markham, Ontario.

Spinster Jane Says:



Our hills are glorious right now. No fairyland could be imagined as more beautiful. And colors! Rich, varied, gorgeous,—yellow, scarlet, deep reds and browns, and the deep green of the pines. I may not be able to wield an artist's brush, but I have an artist's appreciation of this great picture.

Just how much of this appreciation of beauty around us is because it is a part of home? A part of the homestead our own folk cleared and reclaimed from bushland? And, knowing how dear it is to us, and how beautiful, our sympathy goes out to those driven from their heritage in Czechoslovakia; driven from the homes they have built, the lands they have tilled and loved so long. God save us from greedy autocrats here in peaceful America!

In the few days of summerlike weather, recently, bees flew all about. Then came the severest thunderstorm of the year, October 4, since when we've had icy winds, straight from the North Pole. Bees will do well to stay close at home until warmer days again.

Maverick Swarms

Honey-Boy is getting results in his search for maverick swarms. He and a neighbor have joined forces, the neighbor getting the honey, Boy, the bees. The first swarm they found high up in a yellow birch tree. They felled the tree, tied some of the combs in the hive they had ready, and induced the bees to go in peaceably. There was some brood, but no queen, and they believed her killed by the falling tree.

A second swarm was located in the top of a poplar tree. In order to be sure of securing this queen, they took no chances, but sawed off the hollow part, and carried it home, bees and all. The two swarms were then combined, making a strong colony.

Honey-Boy believes that neither swarm would have come through the winter. The first had only a tiny bit of honey of an inferior quality, the second, about ten pounds of buckwheat honey.

Well, our back-to-the-bees young man is learning something. He bought a super of honey to feed his colony, will have to buy honey or sugar to winter them. There is a big risk, too, if some mishap to that colony this winter, unless he takes every precaution. He has learned that he would be ahead in the game were he to buy package bees in the spring.

Getting Honey-Minded

And here while I've been almost denouncing some of our demonstrating dietitions for not using more honey, and not lauding it as it deserves, I find we are growing more honey-minded, here in Canada, than I had thought. Near us is a family where the mother died, several years ago, leaving a large family of small children. The father, being poor, and unable to keep a housekeeper, put his children in a near-by "Children's Shelter." Recently the older ones came home, and while helping the girl cook for and wait upon "threshers," I was delighted to learn this about honey. Under-nourished children, in this same Shelter, were built up by egg-nogg, made up of beaten egg, honey, and either milk or prune juice. As a spread for their bread or toast, as a special treat, they had peanut-butter, mashed bananas, and honey, blended into a paste. Their pumpkin pie was sweetened with honey, also.

I take my bonnet off to that wise matron, and she is a SPINSTER! She surely has common sense. More, I think it is up to Mrs. Nielsen to try out these recipes which the Shelter children like so much, and give us her ideas on them. Never again will I look upon all Institutions as hard, unhomelike, and run by frugal, cut-and-dried methods.

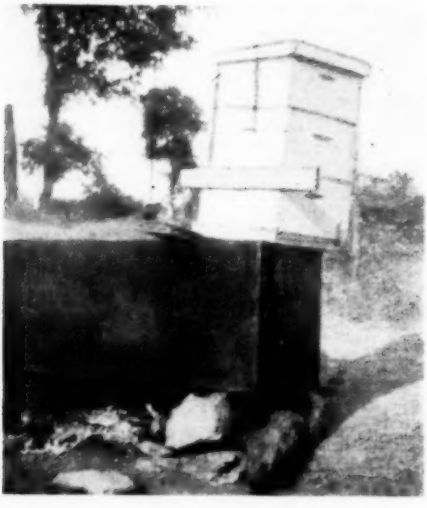
We must do more to see that children get more of this sweet they love so much. Let us start a Honey versus Corn Syrup campaign. This will be something new, and might give honey the chance it never yet has had.

Some enterprising chemist might figure out a lot of things in his laboratory, and let folk know honey is something more than just a carbohydrate.—Spinster Jane.

Heads of Grain from Different Fields

Burning Settles the Matter Now

The accompanying pictures show our boiling operations, a plan which we abandoned in favor of "burning everything" except the top cover. "Boiling" cleaned up our AFB, but it is not safe for the average beginner. Burning everything sounds very expensive but in the end it is the cheapest way. AFB is decreasing in my section. When beginners ask me what to do, I advise them to save the top cover only and char it, but burn everything else at night, having gassed the bees the previous night. It sounds "awful" to burn three or four hive bodies, the bottom board and inner cover but that gets it before it gets you and settles the whole thing **NOW.**—H. L. Rushing, Nashville, Tenn.



Hive (bees gassed) ready for the tank.

Large tank at boiling point. Plan abandoned in favor of burning.

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The Dual-Purpose Partridge Pea

Evidence as to the value of the Partridge Pea *(Cassia Chamaecrista)* as a nectar plant is rather confusing, reports for and against it having appeared in the literature. It is said to give surplus in some parts of the South, and Pellet, in his "American Honey Plants," quotes one rather enthusiastic account from the latitude of St. Louis. I can add nothing new to this phase of the plant's value, except that the hive bees work the blossoms very freely and no doubt secure not a little nectar even in Northern Michigan. I should like to recommend it for trial, however, especially in the dual role of a green-manure crop and a source of honey. The plant is of annual duration, growing naturally from Maine southward and westward, generally in dry soil. It gets about fifteen inches high in my light, sandy soil, producing a generous quantity of foliage, much divided and on the order of the sensitive plant, and blossoms throughout most of the summer. In fact, the plant is quite ornamental and I have often used it in the flower garden with very good effect, but it is in the character of an economic plant that I would now speak of it. Being a legume, it no doubt has the faculty of fixing nitrogen in the soil, as has so many of that family of plants. And being of rapid growth and easy of culture, it makes an admirable subject for use as a green-manure crop. I have used it in the vegetable garden in the latter role with very good results, broadcasting the seeds and lightly raking them in any time during spring or early summer. Planting should be done quite early, however, if it is to serve first as a nectar crop before being turned under. Perhaps seeds are not readily

available in large quantities, but one can quickly work up sufficient stock for green-manuring purposes from a few packets.—C. W. Wood, Copemish, Mich.

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Honey as an Eye Remedy

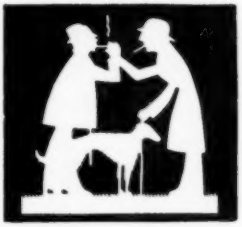
In 1906 the white part of my eyes became blood-shot. At first I had no pains whatever, but after a few days my eyes began to itch. Unfortunately there was no specialist near whom I could consult. Although I had never heard that honey had been used as an eye remedy, I resolved to try it, judging that honey would not harm the eyes. I took a teaspoonful of honey and mixed it with lukewarm water and washed my eyes with the mixture. The result was a comfortable feeling. For several days I continued to wash my eyes with the honey mixture, and in three days my eyes were in a healthy condition. Later I told a doctor of my eye trouble and how I cured it. He remarked: "Honey is the oldest eye remedy known. It has been used as an eye remedy for over 2000 years."—Bro. Alphonse Veith, O. S. B., St. Meinrad, Ind.

48360 Lbs. of Honey on Three Trucks

The two pictures show a total of 806 60-pound tins of honey loaded on to three motor transports (Martains Tranports, Bairnsdale) which were loaded and dispatched from our farm on the same day. The shipment was forwarded to Melbourne by road, a distance of 194 miles. This represented the bulk of our crop of 1936-'37, and comprised mostly a medium grade of honey gathered from the white stringy bark *(Eucalyptus Eugenioides)*. Our yields of honey fluctuate very greatly in this country; for instance, after two good seasons giving an average from 2½ to 3 tins per hive, we have now experienced a season of dearth (1937-'38) in which we have not taken off one pound of honey from over 300 hives! This, of course, only applies to conditions in the eastern part of Victoria. My activities are confined to an area within 10 miles of our home and farm, which is situated about three miles north of Bruthen, and is adjoining an extensive tract of permanently reserved State forest, on which I have one permanent and one temporary site.—F. L. Johnston, Bruthen, Victoria, Aus.

Honey for the Melbourne markets. A consignment of 806 60-lb. tins loaded on three motor trucks ready to leave the farm of F. L. Johnston, Bruthen, Victoria.

Asked and



Answered

Wintering Diseased Colonies

Question.—Is it possible and feasible to winter a few very strong colonies with one or two cells of AFB with the hope of shaking these colonies next spring during the fruit bloom and dandelion honey flow?—W. F. Blake, Ohio.

Answer.—In our opinion, it does not pay to attempt wintering diseased colonies, even though they appear to be populous in bees. Frequently such colonies die during the winter and become a menace to other colonies in the apiary and community. It is advisable to dispose of diseased colonies as soon as they are found.

Wintering Bees in a Chicken House

Question.—I have an old chicken house not in use, in which I am planning to winter twenty colonies of bees. It seems to me that this building should furnish considerable protection for the bees. What do you think?—F. J. Wilson, Pa.

Answer.—Under no circumstances should you attempt to winter bees in a building, unless it be a house apiary arranged so that bees can fly from each hive through specially constructed tunnels built from the entrances of hives to the outside. Such house apiaries are in use in foreign countries. There are a few house apiaries in this country. If bees are placed in a building above ground with no provision made for each colony to fly outside through a tunnel, the bees are likely to leave their hives inside of the building when the temperature rises during warm spells of winter. The bees naturally try to fly outside through windows or other openings and if they do get out they are likely to be lost as they are unable to return to their respective hives. Bees, if wintered inside, should be placed in a dark underground cellar where the temperature runs between 40° and 50° F. In your latitude the twenty colonies, if populous in bees and well supplied with good honey, should winter well out-of-doors in a spot reasonably well protected from the prevailing winter winds.

Mice in Bee Cellar

Question.—How can I keep mice out of my hives in a bee cellar during the winter?—M. A. Tracey, Ontario.

Answer.—You may use poison, or you may place a piece of coarse ¼-inch mesh wire screen over the entrance of each hive to exclude mice and at the same time permit bees to pass through. In no case should you place a fine wire screen over each hive, because, the bees not being able to get out are likely to worry themselves to death.

Proper Time to Put Bees in Cellar

Question.—I have built a bee cellar in the side of a hill and plan to put my sixty colonies away some time before winter. When should I put the bees into the cellar and when should I remove them next spring?—J. L. Hunt, Wisc.

Answer.—Beekeepers in the North who winter in cellars usually move their bees in some time the latter part of November. As a rule, there are a few warm sunny days about November 20, that give bees an opportunity for a good cleansing flight. Directly following this flight is a good time to put bees away for winter. A cool day is better than a warm day for moving bees. Hives should be handled very carefully to avoid disturbing the bees. Hive entrances should be left open in the cellar to permit colonies to carry out dead bees during the winter. Colonies should be removed from the cellar some time in April when the first early pollen is available. If possible, select a cool cloudy day rather than a warm day in order to avoid the drifting of bees from one hive to another.

Wintering Over Young Queens

Question.—Is it possible to carry young queens produced late in the season through the winter to be used the following spring?—R. A. Small, Ill.

Answer.—Here at Medina we have wintered queens successfully in double-mating hives in our bee cellar. In Beltsville, Md., W. J. Nolan, of the Bee Culture Laboratory, has wintered four queens over a normal colony. The queens are placed in a four-compartment mating hive, the compartments separated by fine wire screens. Each compartment contains two combs with bees and a queen and has a separate outside entrance. The entire double-story hive is packed. It is doubtful if such an arrangement would be satisfactory in your state where the winter temperatures run low at times. This arrangement might work in the North if such a double-story hive were put into a properly constructed bee cellar. We hope to do some experimenting along this line in the future.

Late Fall Honeys for Winter Stores

Question.—I have heard that late fall honeys, like goldenrod and aster, are not as suitable for winter bee food as earlier-gathered honeys, like clover and buckwheat. Is this a fact?—M. A. Cook, Mich.

Answer.—Generally speaking, yes. However, good results in wintering bees

have been obtained with late-gathered honeys. Much depends on the condition of the colonies, also the nature of the late honey flows. Very populous colonies are likely to ripen late-gathered honeys properly, especially when the honey flow is followed by a warm spell of weather. If, however, the last honey flow of the season is followed by a cold spell the bees are unable to drive off the excess water content from the nectar and the resulting honey of high water content is likely to ferment and this in turn may cause dysentery, if the bees are kept in their hives for long periods due to cold weather. On the other hand, properly ripened honeys gathered earlier in the season are more likely to be suitable for winter bee food.

How Should a Few Stands of Bees be Moved?

Question.—I am going to move them only 2½ blocks from where I now have them and I am unable to move them away a distance and then back again to the new location.—Fred Rud, Ind.

Answer.—In order to move your bees a distance of two and one half blocks, you should do the moving late in the evening after the bees have returned from the fields. If you leave no trace of empty hives or equipment on the old location you are not likely to have any trouble with old bees that return to the original location. If, however, you should leave old equipment, or any semblance of a hive, the old bees are likely to return in considerable numbers and cluster in the hive or on the equipment. At one time we moved an apiary of 75 colonies a short distance, from one side of a road to the other. The moving was done late in the evening. Quite a number of the old bees did return to their former location the following morning, but, not finding any hives to enter, they flew around a bit, then returned to their new location and settled down.

Bees Using Cappings for Comb Building

Question.—Do bees use cappings and bits of wax deposited in the hive for building comb?—Carl Tetirick, Ohio.

Answer.—According to observations by Dr. Bruce Lineburg some years ago, emerging bees deposit small pieces of cell cappings on the walls of their cells in gnawing their way out, and these pieces are later gathered by other bees for use in capping other cells. It is suggested that you consult the following references: Lineburg, Bruce. 1923. What do bees do with brood cappings? A. B. J. LXIII, No. 5, pp. 235-236. Lineburg, Bruce. 1923. Conservation of wax by the bees. A. B. J. LXIII, No. 12, pp. 615-616. —Answered by W. J. Nolan, In Charge Division of Bee Culture, Beltsville, Md.

Will Calcium Cyanide Injure Honey?

Question.—I have some bees that I intend to kill with calcium cyanide and I want to know if the cyanide will injure the honey in any way so it will be unfit for use. If so, what should I use to kill the bees? I wish to save the honey and extract it from the frames.—Victor D. Lafgren, Pa.

Answer.—Calcium cyanide, or, Cyanogas, as it is sometimes called, becomes inert after being put into hives and exposed to air. The honey in the combs that comes in contact with calcium cyanide is not damaged or made unfit for human consumption. The combs should be thoroughly aired after being removed from the hives. At least twenty four hours should elapse from the time combs are treated until honey is extracted. A slightly longer time would be better. You should read directions carefully before using Cyanogas, as it is a powerful chemical.

Do Bees Fly in a Straight Line?

Question.—Mr. Allen Latham, writing in the Harvard Alumni Bulletin of February 11, 1938, states that bees do not travel in a straight line but follow the line of least resistance. This statement seems to upset the well-known saying, and he is the only authority that I have ever heard make this statement. The editor's note on Mr. Latham's article states that Mr. Latham has kept bees for 55 years. I would like to have an expression from some other observers as to the correctness of this statement.—W. F. Ficklen, West Virginia.

Answer.—Allen Latham is right. Bees do not travel in an exactly straight line when there are obstructions in the way, and they will therefore follow the line of least resistance, even though it may be in a semi-circle. The reason bees go around an obstruction is because the lower air currents are not as strong as those up above trees, or high in the air. As a rule, bees fly as close to the ground as possible, especially if there is a wind. Again, when there are obstructions in the way, the bees travel in rather a zigzag line, but the general direction is toward their home.

Leaving Queen Excluders On During Winter

Question.—I have double-story colonies, each with a queen-excluder under the food-chamber. Should I leave these excluders on or remove them during the winter months?—M. A. Chalmers, Wisconsin.

Answer.—By all means, take off the excluders during winter. One winter we left a few excluders on some two-story colonies as a test. The following spring we found in most of the hives that the clusters of bees were above the excluders and the queens dead below the excluders, outside of the clusters. Since that experience we have been careful to remove queen-excluders in the fall. In parts of the far South where winter temperatures are not low it may be possible to leave excluders on, but in the North it is inadvisable.

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American Honey Institute Notes

Honey!

Through the ages the use or restriction of certain foods was advocated to treat disease. A Babylonian tablet of one of the first dietitians reads "If a man has a pain inside, food and drink coming back to his mouth, let him refrain from eating onions three days." For cure, Honey, lamb fat, and butter were recommended. This is the earliest dietary prescription we know about.

Honey on the Air

Miss Mary Brady, Nutrition Specialist, University of Wisconsin, gave an inspiring talk on Honey over WHA, the University broadcasting station. Specialists in other states are planning to include "Nature's Own Sweet" in their broadcasts.

Honey-Tea

One of the different ways in which Honey Harvest Week was celebrated was with a Honey Tea given by the Ladies' Auxiliary of the Texas Beekeepers' Association in San Antonio. Mrs. Jean Parks Bremer was in charge of the Tea. Mrs. Bremer is Chairman of the Bexar County Auxiliary.

Honey-Toast

Another unique program is the one sponsored by the Monongahela West Pennsylvania Public Service Co. in Fairmont, West Virginia. They tied Honey in with their annual Toast Week.

Honey-Peas

The American Honey Institute furnished suggestions for various salad combinations using Peas for the Pea Drive. Honey Salad Dressing recipes were used. The Institute plans to cooperate with the Agricultural Authorities by furnishing honey recipes in connection with other good food products.

Honey Menus

The A. H. I. will be glad to assist the homemaker to plan her holiday or party menus.

Honey Slogan

We trust that Honey Harvest Week is but the beginning of an exceptional all-Honey year. Let our slogan be "Keep a Happy, Healthful Home with Honey."

Honey Information

Watch for your next issue of Institute Inklings. It will contain stories on: A restaurant that attributes its success to the use of 90 to 100 gallons of Honey each week, Packaging, Christmas Wrappings, The Value to the Honey Industry of our Advisory Board, The Use of Honey in Cosmetics, Honey Fed Athletes, 4H Club Contest Winners, College Girls Select Honey for Study, Ladies' Auxiliary Activities, Suggested Holiday Menus and Recipes for the Homemaker.

Honey-Minded

A few of the contributors to the November issue of Institute Inklings are: Miss Genevieve Callahan, Home Economics Consultant, San Francisco, California; Mrs. E. L. Kirkpatrick, Secretary of Homemakers Division of the American Home Economics Association, Washington, D. C.; Mr. Lewis Parks, Chairman of the Advisory Board of A. H. I.; Harold J. Clay, U. S. Department of Agriculture; G. W. Cobb, Jr., American Can Company; Jere Frazer; and Neal I. Gilson, Board of Agriculture, Oklahoma.

Honey Contest

The Honey Menu and Recipe Contest closed October 1st.

In Class A—Holiday Cookies, 138 individuals made entries; 23 states were represented.

Class B—Sauces or Toppings for Ice Cream, Puddings, etc.; There were 78 entries.

Class C—Menus for One Day; There were 78 entries.

Class C—A special class for 4H Club Girls; 27 girls made entries.

The winners in Classes A, B_1 and C will be asked to make the final product for the exhibit to be held at New Orleans on December 5, 6, and 7.

The winners in Class D will be announced in the next issue of Inklings.

Honey Luncheon

The members of the Staff of American Honey Institute are looking forward with great pleasure to meeting those who will be fortunate enough to attend the convention in New Orleans. A Honey luncheon for the women will be held in the Hawaiian Room of the Hotel Roosevelt on Institute Day. Mrs. C. F. Scherer will preside at the luncheon.

A Confab

By the Editors

Wintered-Over Colonies vs. Package Bees

In the October Confab Jack Deyell, manager of The A. I. Root Co. apiaries, aired his views on the topic. Fred A. Krause, Barron, Wisc., a former contributor to Confab, calls attention to the fact that Deyell did not take into consideration all the facts involved. Read what Mr. Krause says:

If we are going to discuss in your Confab, which is most profitable, package bees or wintered-over colonies, we must take all facts into consideration, which Mr. Deyell did not do in the October issue. He mentions how much stores a colony consumes from November 15 to April 15. Any one would not let those bees consume honey that late, if he intended to destroy those bees. We must figure how much honey a colony will consume from the end of the last honey flow or as soon thereafter as the honey is ready to extract, till, say, April 15, in this latitude. In my many years of experience, in western Wisconsin, as a rule bees do not make more than a living after the latter part of August, or possibly September 1. Then why let them consume longer?

Now, Ira Bartlett takes one step further than most beekeepers who advocate package bees instead of wintered-over colonies. He cages the queens about July 10, and does not raise any more consumers after that date from eggs. I asked him in a letter one time how much honey he could save by caging the queen instead of letting the colony have their own way? The answer I got was, an estimate of from 25 to 40 pounds per colony, depending on the season, so that what the colony needed to carry it to April 15 would be many times more than what Mr. Deyell spoke of. So this looks, if all that honey Mr. Bartlett saves, was sold for cash, one could buy good-sized packages in the spring and have still considerable money left.

But here is where we would run up against a snag. If a few would only kill off their bees and buy package bees, instead of wintering bees, we would feel no ill effects. But if we all would do that, then we would dump many more tons, or even carloads, maybe train-loads of honey on the market which would probably make honey cheaper, and package bees higher priced and it would be a boon to the express companies and the sugar companies but neither one of them would help us out. There is lots to take into consideration on this subject.

Fred A. Krause,
Barron, Wis.

Yes Mr. Krause, there are many things to be considered in connection with this question. Most of us are inclined to be biased in our views. Any beekeeper seeking a sensible solution to this question should weigh carefully the advantages and disadvantages of both methods, as applied to his locality. Possibly some of the beekeepers in the far North who kill bees in the fall and stock their hives with package bees in the spring will give us the results of their recent experiences.

Top vs. Bottom Entrances, or Both

At this season of the year it seems appropriate to again consider the topic of winter hive entrances which was introduced in Confab about a year ago. It is a topic of vital importance, especially to beekeepers in the North. The question is,—shall we have only a bottom entrance, a top entrance, or both?

In the November, 1937, Gleanings, page 676, there appeared an article on "Top Entrance Wintering," by H. A. Schaefer of Wisconsin, a commercial beekeeper. Mr. Schaefer uses a top entrance ⅜"x4" extending from the hole in the inner hive cover to the outside, through the packing and tar paper. This type of top entrance seems to give good results.

One advantage of the top entrance seems to be that it carries off excess moisture which accumulates in the top of the hive and therefore keeps the interior of the hive dry.

In January, 1938, Gleanings, Frank Labus, Minerva, Ohio, comments on the top entrance and later J. F. Norgren, Junius, South Dakota, writes the following in reply to Mr. Labus:

In reading the opinions on the several subjects discussed in the January Confab I was pleased to be informed that the winter top entrance has at last justified itself as being really useful. It has served to give

Frank Labus, Minerva, Ohio, a "delightful kick". And that, according to Mr. Labus, is the full extent of its usefulness.

However, I would like to present some problems for the consideration of Mr. Labus and other skeptics. First we will do as Mr. Labus suggests—let the bees decide whether or not they want a top entrance. But we will begin our experiment in the spring with a colony that has been wintered with a top entrance, bottom closed. Now without changing the position and appearance of the hive too much, open the bottom. The bees will continue to fly from the top and with convincing finality disprove Mr. Labus' theory that "The bee test shows a top entrance is wrong." It's all a matter of where we start from, in spite of the fact that bees have a native tendency to work upward. I have found it most vexing to switch bees from the top entrance to the bottom in the spring unless it is done simultaneously with unpacking which helps to induce them to re-locate their environs and focal points.

Scientific Reason for Top Entrance

Our next problem is concerned with the scientific reason for the top entrance with an incidental reference to thickness of winter packing. To the exponents of light packing who work on the theory that the warmth of the sun will penetrate quicker, thus warming the cluster, I ask this question: Why not build the walls of houses thinner so as to derive more benefit from the sun, thereby saving on the coal bill? Some logic!

The applied science of the top entrance can best be studied if the beekeeper will consider himself the object of the experiment.

Consider the babe—how its mother swathes it deep in blankets for a long, cold ride. As a final bulwark against the cold the blanket is folded double about the feet, and looking down, all you see is a ruddy nose and a sleepy eye peeking through the smallest possible hole in the blanket fold. That's top ventilation.

Beekeepers, in common with most other people, I believe, sleep with their heads sticking out and the comforters securely tucked under at the foot. More top ventilation! If bottom ventilation were so much better why don't we cover up our heads and let our feet stick out?

Again, suppose any one of us had to spend a January night out-of-doors. No doubt the first thing we would look for would be a stack of hay or straw into which we could burrow a hole, good and deep. Once down in the hole and with the top covered except for a small ventilative opening we'd stand a good chance of passing the night in comfort and warmth. Regardless of wind velocity there would be no draft, yet the opening being in the same region as the collection of respired moisture, would find its quickest way out.

So the moral, I believe, is this: Do unto thy bees as well as thou would do unto thyself.

J. F. Norgren,
Junius, So. Dak.

An Opponent of Top Entrances

Now we present Grant D. Morse, Saugerties, N. Y., who believes that proponents of the top entrance are misled in their reasoning. Read what he says:

"In preparing my bees for winter, shall I provide a top entrance, or is the regular summer entrance on the bottom just as good?" inquires a neighbor beekeeper.

I venture to repeat here the substance of my answer to him because from time to time I read in the bee journals articles urging the superiority of the top entrance.

As I understand them, the advocates of the use of the top entrance base their claims on these grounds:

1. That the top entrance avoids the damaging effects of moisture within the hive;

2. That the top entrance eliminates the danger of clogged exits on the bottom board;

3. That the top entrance makes robbing less likely;

4. That the top entrance is a more natural and ready passageway inasmuch as bees tend to cluster toward the top of the hive in cold weather.

I will take each of these reasons in order and attempt to show why I truly believe the proponents of the top entrance are misled in their reasoning, or else why they are not following the best method of providing the bees with a passageway to the out-of-doors during the winter season.

Let us consider the first contention that, "The top entrance avoids the damaging effects of moisture within the hive." My answer to this

thought is that while the top entrance is providing an exit for moisture it is at the same time unavoidably providing an exit for the heat which the cluster of bees need for protection and comfort during the colder days and nights of the winter season. I believe no one would argue that they don't need this heat. If they didn't need it, they would not cluster. And if we were not agreed that they need it, we would not pack them for winter. That, to my mind, is the biggest argument against the top entrance. But do not underestimate the importance of that argument. Heat is essential to the welfare of the colony. Heat saves energy. Heat saves bees. Heat provides comfort and safety. Heat saves stores. Heat keeps the queen healthy.

But, say the advocates of the top entrance, how can you preserve the heat without also retaining the moisture which is so damaging to the bees and to the combs? Here is a simple method, one that keeps the colony dry without chilling it, one that is inexpensive, requires little time, one that demands little equipment, and finally, one that does not alter the construction of the hive. After the bees have become relatively inactive late in the fall, and not inclined to seal everything up with propolis, place one or two thicknesses of common burlap over the bee-escape hole in the inner cover, and over this place either a wire mesh or a piece of ordinary fly screen. Both can be held in place with four or five tacks. This provides a slow but adequate escape for surplus moisture and at the same time prevents the entrance of mice. Meanwhile the heat of the colony is not lost. An entrance cleat with a reduced passageway on the bottom-board provides an exit at the place the bees are familiar with, reduces the circulation of air to the proper point, and keeps out mice there.

Does this method of ventilation work? I can testify from personal experience that it does work, that it keeps the bees dry, and that they winter well when it is employed.

Clogged Exits a Menace

Let us look secondly to the contention that the top entrance avoids death to the colony from clogged exits. True, the top entrance provides this safeguard, but users of the regular bottom entrance experience little or no difficulty if merely ordinary precautions are taken. Those who fear trouble at this point, place the entrance cleat bottom side up, thus giving the bees approximately an inch of congested space on the bottom-board as a safeguard, also they see to it that the hive tips slightly forward so that any moisture that may collect on the alighting-board during a thaw may drain off. If these two simple precautions are taken, no one need fear a clogged exit. As with a top entrance, there is sufficient heat in a hive to provide ventilation at the bottom entrance to a colony buried beneath a depth of snow.

The third contention is that the top entrance makes robbing less likely. This may be, but I have yet to find that colonies in even fair condition have anything to fear from robbing during cold weather at the regular bottom entrance, especially if that entrance is restricted by an entrance cleat, as it should be. As one of my neighbor beekeepers with years of successful experience on his shoulders says, "If there's robbing look to the queen. She's either no good, or missing altogether". How often I've found this true! In my opinion, the reason why bees are observed to be crowding the top entrance is that they have been delegated to clog the entrance so as to shut off excessive circulation and save heat.

The Top Entrance a More Natural Passageway

The fourth contention of the advocates of the use of the top entrance is that it is a more natural passageway. It is my observation that it is true that a colony of bees given two passageways, one at the top, the other at the bottom, do prefer to use the top passageway. At least this seems to be true during the honey flow and pollen-gathering period. I suspect this is due, however, to their desire to avoid carrying their load up through the hive against the force of gravity. On the other hand, bees accustomed to a bottom entrance up to the wintering period, prefer the bottom entrance because they are accustomed to it, and must form new habits of flight when the entrance is shifted.

But, be this as it may, the argument is not of sufficient weight to be of too much significance. It is not

(Continued on page 723)

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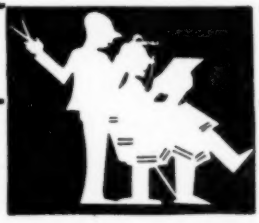
Just News



Extensive preparations are being made to make the annual convention of the California State Beekeepers' Association, scheduled for Santa Barbara, November 15, 16, and 17, bigger and better than ever. Convention headquarters will be at Hotel Barbara with the meetings in the beautifully appointed American Legion Hall, a few blocks away, on the ocean front. The view of the break-water-protected beach, the wharf and boats is certainly unique and worth coming a considerable distance to see. I am advised by Secretary Hartman that the program will be different from other conventions in that the subjects will be presented as topics for discussion rather than in the form of lectures. This will permit a majority of those present to take part and will bring out the best of beekeeping practices. Marketing and production problems will receive the lion's share of the program, with other topics of interest to both large and small producer as well. All California beekeepers are requested to present a design that might be suitable for the bee and honey exhibit at the Golden Gate Exposition in 1939 to fit a wall space of 13 feet deep, 27 feet long and 27 feet high. The ladies are requested to bring honey cakes, cookies and candies for a competition to determine the winning recipes for the Golden Gate Exposition exhibit. A further contest will consist of seeing who can present the best empty brood comb for prizes of foundation. Other features as well will make this convention different from all others, so come and bring a neighbor.—J. E. Eckert, Associate Apiculturist.

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The Iowa Beekeepers' Association will hold its annual meeting at Des Moines at the Savery Hotel on November 10 and 11. These meetings are held in conjunction with the meetings of other affiliated organizations of the State Horticultural Society. Special emphasis is to be placed upon the subject of marketing. The Beekeepers' Association will meet with the Horticultural Society and the Vegetable Growers' Association on the forenoon of the 10th for a general meeting on marketing. The afternoon session will be devoted to a forum discussion of Marketing with ten local leaders discussing various phases of marketing. The guest speaker will be Dr. M. C. Tanquary of University Farm, St. Paul, Minnesota. Dr. Tanquary will participate in the discussions on Marketing and will present as his major topic, "Trends in Beekeeping." A special effort is being made to assemble displays and exhibit material and space is to be provided for the display of beekeepers "pet equipment." A new feature this year is to be in the form of a display of honey which will be given ribbon awards.—F. B. Paddock, Extension Apiarist, Iowa Agriculturist College.

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The Oregon State Beekeepers' Association and the Washington State Beekeepers' Association will meet in a joint session in Portland, November 18 and 19. Both organizations will meet separately Friday morning and Friday afternoon. The joint sessions will start with a dinner Friday evening. Saturday will be devoted largely to a joint program. At the close, each association will meet separately for a closing business meeting. —H. A. Scullen, Secretary, Oregon State Beekeepers' Association.

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A beekeeper in Michigan has been arrested by State troopers and charged with transporting diseased bees from one county to another, in violation of the State Apiary Act. It seems that he did not secure a permit before moving the bees, and is therefore liable to a fine and imprisonment. The case has attracted considerable attention, for it should be known in Michigan and other states where similar laws are in effect, that bees cannot be moved even short distances, or from state to state without a permit from the State Apiarist, following an inspection wherein it is shown that the bees were apparently free from disease.

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As the Secretary of Agriculture signed a new Bee Marketing Agreement September 2, to be effective September 6, it is now up to the queen and package shippers to make it work to the advantage of all concerned. The new Agreement contains recommendations as suggested at the hearing in New Orleans last December. Although it does not contain all the regulations wanted by a number of shippers, it is the best Agreement that could be obtained at that

time. Some think it will not be workable, while others think it better than the old Agreement in many ways. In the final analysis, the effort put forth to make it successful by those affected will decide the value of the new Agreement. As the Southern Conference is the official shippers organization, there will be necessary time allotted for a thorough discussion of the new Agreement at the Charleston meeting, November 28, 29, and 30. All queen breeders and package shippers are requested to attend. The following is a list of the executives from their respective states: G. W. Bohne, La., Roy Weaver, Texas; J. W. Ricer, Okla.; Leslie Wedgeworth, Arizona; Homer W. Richards, Arkansas; Jasper Knight, Ala.; N. C. Jensen, Miss.; L. M. Lewis, Fla.; E. H. Ezell, S. C.; P. G. Craddock, N. C.; H. W. Weatherford, Va.; G. M. Bentley, Tenn.; J. G. Rossman, Ga. All executives are asked to contact as many of their bee shippers and honey producers as possible and urge them to attend the Charleston meeting. Any executive, who finds he can not attend the Charleston meeting, is asked to secure an alternate who will attend and represent his state. The Southern Conference is anxious to have every southern state represented. —A. V. Dowling, Secretary, Southern Beekeeping States Federation.

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Beekeepers from all over the country are being invited to the Beekeepers' Winter Round-Up in Florida to be held in Largo, on the west coast of Florida, Tuesday, February 21, 1939. The invitation is being extended in plenty of time for all those desiring to attend to make ample preparations.—W. H. Williamson, Sec'y. Florida Beekeepers' Association.

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The report of the Illinois State meeting held in 1937 is now available as usual in book form. Members of the Association can secure copies free by applying to the secretary, Hoyt Taylor, Pleasant Plaines, Ills. Doubtless those outside of the state will pay a fee. This report is notable in that it contains almost a complete text book on bees and honey by Dr. V. G. Milum of the University of Illinois. After having read not a little of this we consider it not only interesting but reliable as does everything that comes from the pen of Dr. Milum, who specializes in beekeeping at the University. His practical work on how to keep bees is packed by scientific research work.

American Honey Producers' League Meeting

PROGRAM

Roosevelt Hotel, New Orleans, La.,
December 5, 6, 7, 1938.
Monday, December 5, 1938
American Honey Producers' League Day
W. E. Harrell, Presiding.

8:00 A. M.

Registration.

10:00 A. M.

Opening Addresses—
The Governor — Richard W. Leche
The Mayor — Robert S. Maestri
The Commissioner of Agriculture — Harry D. Wilson
The Director of Extension — J. W. Bateman
Response — E. Guy LeStourgeon

1:30 P. M.

President's Address — W. E. Harrell
Secretary's Report — Geo. W. Bohne
Appointment of Committees
Announcements

2:00 P. M.

Gleanings in Bee Culture—
A Bird's-eye View of our Industry and its Needs — M. J. Deyell

2:15 P. M.

American Bee Journal—
Subject to be announced — L. C. Dadant

2:30 P. M.

Beekeepers' Item—
Subject to be announced — E. G. LeStourgeon

2:45 P. M.

Marketing Agreement — J. M. Robinson

3:00 P. M.

Market Reporting — Harold J. Clay

3:15 P. M.

City Beekeeping — Bagby Hall

3:30 P. M.

The Cost of Producing a Package — Thos. W. Burleson

3:45 P. M.

The Efforts Made by Southern Package Shippers to Please the Buyer — J. W. Newton

4:00 P. M.

Population—Production Ratio — C. L. Farrar

Addenda—

Sight-seeing tours have been arranged for each day of the meeting. Mrs. C. F. Scherer will handle this detail, especially for the ladies, and trips will be timed to suit your desire and convenience.

Tuesday, December 6, 1938
American Honey Institute Day.
R. H. Kelty, Presiding

8:30 A. M.

Registration

9:30 A. M.

Music

10:00 A. M.

Our Institute — Geo. W. Bohne

10:30 A. M.

A Wider Use of Honey in the Home — Harriett M. Grace

11:00 A. M.

The Composition of Honey and its Utilization; Relation of Composition and Viscosity — R. E. Lothrop

12:30 P. M.

Luncheon Meeting for Women
Mrs. C. F. Scherer, Presiding
Speakers to be announced
Place—Hawaiian Room, Hotel Roosevelt

2:00 P. M.

Speaker to be announced

3:00 P. M.

Meeting—Ladies' Auxiliary

7:00 P. M.

Banquet—No Speeches—All Fun

(Continued on page 721)

XUM

MORE ABOUT THE NEWPORT, IND., ROUND-UP

Since writing a brief account of the Newport, Indiana, meeting on September 10, appearing on page 617, October 1938 Gleanings, we have received a letter from L. R. Stewart, host of the Round-up meeting, stating that there was a registration of 576. Doubtless many failed to register.

At this time space does not permit a lengthy write up,—but just a few high lights.

The hive nailing contests for women, a marvelous display of feminine ability to wield hammers, was won by (1) Mrs. Otto Gill, Montezuma, Ind.; (2) Miss Marian Windish, White Pigeon, Mich., and (3) Mrs. H. D. Phillips, Montezuma, Ind.

The question-bee, referred to in last issue was, in our opinion, one of the best items of the entire program and could well be repeated in future meetings over the country. Eight experienced beekeepers faced the audience to answer questions on beekeeping fired at them by people in the audience. Three judges sat on the side. The winner of the contest Paul Sloboda, 442 Dakota St., Dayton, Ohio, received a copy of the A B C and X Y Z of Bee Culture.

Top picture shows Mr. Stewart holding his birthday cake. He didn't tell us his age.

Middle picture shows Jas. E. Starkey, Secretary of Indiana State Beekeepers' Association, and state apiary inspector, in the midst of the crowd.

Bottom picture shows the big tent in which the program was held.

Buy and Sell Here
CLASSIFIED ADS

Only responsible advertisers and honest advertisements will be admitted to these columns. References required from new advertisers not known to us. Rate—7 cents per counted word each insertion. Each initial, each word in names and addresses, the shortest word such as "a" and the longest word possible for the advertiser to use, as well as any number (regardless of how many figures in it), count as one word. Copy should be in the 15th of month preceding.

HONEY FOR SALE

CLOVER HONEY in 60's. Lloyd Sugaski, Elyria, Ohio.

CHOICE CLOVER honey 6½c. John Bour, Tiffin, Ohio.

HONEY in new sixties. Walter Rink, Port Hope, Michigan.

CLOVER COMB also extracted in sixties. C. Holm, Genoa, Ill.

BUCKWHEAT HONEY in kegs. Walter Spink, Varysburg, N. Y.

NEW CROP clover comb honey. Ida Guhl, Napoleon, Ohio, Route 2.

CHOICE clover honey, 9 tons, 6½c. John Leonard, Scottsville, N. Y.

CLOVER HONEY for sale. Write for prices. Henry Price, Elizabeth, Ill.

QUALITY honey comb and extracted. D. J. Blocher, Pearl City, Illinois.

FANCY clover honey, case or quantity. J. Stahlman, Grover Hill, Ohio.

FOR SALE—Clover honey, 60-lb. cans, sample. Henry Hettel, Marine, Ill.

FOR SALE—Extracted and comb honey. M. W. Cousineau, Moorhead, Minn.

HONEY—Light and light amber extracted. F. W. Lesser, Fayetteville, N. Y.

CHOICE MICHIGAN clover honey in new 60's. David Running, Filion, Mich.

FINEST clover extracted by case or ton lots. Jones Apiaries, Sauquoit, N. Y.

BASSWOOD HONEY—60-lb. cans, $6.00. Adams & Myers, Ransomville, N. Y.

AMBER HONEY—5c per pound in case lots. Kenneth Gallant, Jordan, N. Y.

NORTHERN Michigan white honey, case or carload. C. J. Freeman, Mesick, Mich.

CHOICE clover honey in 60's. Frank Bornhoffer, Mt. Washington, Cincinnati, Ohio.

DELICIOUS clover honey, Scribner Hill Apiaries, Ionia, N. Y. All standard packs.

CLOVER comb and extracted. Quotations on request. Howard Grimble, Holcomb, N. Y.

FOR SALE—New crop of clover honey in 60-lb. cans. Geo. M. Sowarby, Cato, N. Y.

CHOICE CLOVER and light amber honey in 60's. The Hubbard Apiaries, Onsted, Mich.

NEW clover honey in 60-lb. cans, 6½c. None finer. Walters Apiaries, Burgoon, Ohio.

CLOVER honey, extracted, 8c; comb, $3.50 case. B. Hadenfeldt, 2908 Gaines, Davenport, Ia.

STOLLER'S Unexcelled quality clover honey, 5's, 10's and 60's, finest obtainable. Prices on request. For satisfaction, write STOLLER APIARIES, Latty, O.

HONEY all grades, extracted or comb, amber or white. F. J. Smith, Castalia, Ohio.

NEW CROP basswood extracted honey, also clover. Fine quality. Gelser Bros., Dalton, N. Y.

LIGHT clover honey — finest quality, in new sixties. Leland Farnsworth, Davison, Mich.

70,000 POUNDS water white clover honey. Will pack to order. Henry Hansen, Webb, Iowa.

FOR SALE—Fancy Iowa white clover extracted honey. Kalona Honey Co., Kalona, Iowa.

CHOICE clover honey, new 60's, case, $7.20. Sample 10c. Owosso Dairy, Owosso, Mich.

MICHIGAN'S finest well-ripened white honey in new 60's. Jay Cowing, Jenison, Mich.

BEST CLOVER in new 60's, 7½c; new light amber, 6½c. E. S. Miller, Valparaiso, Indiana.

ORANGE, palmetto and mangrove honey in new sixties. Peter W. Sowinski, Port Pierce, Florida.

DELICIOUS white clover, also light amber honey. Samples free. Henry Stewart, Prophetstown, Ill.

FANCY clover honey, in new 60's. Send for sample and price. A. A. French & Son, Theresa, N. Y.

CHOICE clover and raspberry-basswood honey in 5-lbs. and 60's. F. L. Barber, Lowville, N. Y.

RIPE MICHIGAN clover honey in new sixties, 7 cents. C. B. Waters, Route 4, Grand Rapids, Mich.

PURE clover honey, 60 lbs. $4.20. Write for price on 5 and 10 lb. pails. F. F. Karakel, Williams, Iowa.

NEW CROP CLOVER extracted. Let me know the quantity you can use. Emery Horton, Holcomb, N. Y.

FINE clover and buckwheat honey by the case or ton. MacMullen-Lyman Apiaries, Greenwich, N. Y.

FINEST QUALITY clover honey. Also light amber. Case or carload. Don Barrett, Howell, Michigan.

CHOICE white clover extracted, also good light amber honey in new 60's. Noah Bordner, Holgate, Ohio.

NEW CROP clover honey in new 60-lb. cans, case of 120 lbs. at 7½c. Al's Honey Farm, Mundelein, Ill.

FOR SALE—Fine clover honey, also fall flowers amber honey, in 60-pound cans. Prices and sample for the asking. Tons of each kind. Let us serve you. W. S. Earls, New Canton, Ills.

FINEST CLOVER extracted honey, 60-lb. cans, 7c per lb. Irvin Van Devier, Medina, O.

A-1 WHITE CLOVER extracted honey in 60's. State your wants. Leonard S. Griggs, 711 Avon St., Flint, Mich.

FANCY TUPELO and light amber honey for sale, barrels and 60's. Marks Tupelo Honey Co., Apalachicola, Fla.

WHITE clover and basswood 5's and 60's, 10c a pound. Ralph Hibbard, 131 Benedict St., Watertown, N. Y.

NEW YORK STATE finest clover honey in 60's and five-pound pails. Walter Severson. Box 825, Albany, N. Y.

BUCKWHEAT, 5½c; white clover, 6½c, by case or carload. Sample 20c coin. Otto Hurd, Phalanx Sta., O.

ASK FOR our new lower prices on our best Michigan clover honey. E. D. Townsend & Sons, Northstar, Michigan.

WE BUY AND SELL ALL KINDS COMB and extracted, carloads and less. H. Blitz, P. O. Box 3452, Philadelphia, Pa.

FINEST GRADE clover honey packed in new 60's, also No. 1 comb. Priced reasonable. Lewis Klaty, Carsonville, Mich.

FINEST QUALITY white clover honey. $7.20 per case, 120 lbs. Sample, 10c. Arthur Thayer & Sons, Freeland, Mich.

HONEY FOR SALE—All kinds, any quantity. H & S Honey & Wax Co., Inc., 265-267 Greenwich St., New York, N. Y.

NEW CROP honey ready for sale. Comb honey, chunk and extracted. Write for prices. H. E. Crowther, Cass City, Mich.

CHOICE new white clover honey in 60's and in 5 and 10 lb. pails. R. C. Bish, successor to Moore Apiaries, Tiffin, Ohio.

WHOLESALE—White comb honey and amber, white extracted and amber. Chunk comb in pails. N. B. Querin, Bellevue, O.

WHITE CLOVER and buckwheat honey in new sixties, finest quality, any size lots. Andrew Mahay, Johnstown, New York.

CHOICE clover honey in 60-lb. cans, 6½c; also buckwheat in kegs and 60-lb. cans, 6c. Seward Van Auken, Duanesburg, N. Y.

SUPERB quality clover honey at rock-bottom prices. Case or quantity. Inquiries invited. Scott's Honey Farm, La Grange, Ind.

WHITE comb honey, $3.50 case. Pails, jars, extracted white. Catalog. Beekeepers' supplies. Lund's Honey Shop, Erie, Pa.

SELECT LOTS—Extracted honey. Prices right. Write us about your needs. A. I. Root Co., 224 West Huron St., Chicago, Ills.

CHOICE WHITE CLOVER comb and extracted honey. Sample extracted, free on request. Harry T. Gable, Romulus, N. Y.

LET ME book your order for your season's needs of clover and buckwheat honey, 60's and 5's. C. J. Baldridge, Romulus, N. Y.

FANCY white clover extracted honey. Case or carload. Price on request. Sample 15c. Jos. H. Hoehn & Sons, Ottoville, Ohio.

FINEST WHITE clover honey in 60 and 5 lb. pails. Sample, 15c. Prices on request. F. W. Summerfield, Grand Rapids, Ohio.

HEAVY FANCY white comb, $3.50 case; Fancy, $3.25; No. 1, $3. Fancy amber, $3. Fancy buckwheat, $2.75; No. 1, $2.50; White clover extracted, 7½c; amber, 7c; buckwheat, 5½c. C. B. Howard, Geneva, N. Y.

FOR SALE—60,000 pounds white to water white clover honey. Wesley Johnston, Port Hope, Michigan.

FINE HONEY, clover, clover-basswood and buckwheat in sixties, pails and jars, prices reasonable. Ray C. Wilcox, Odessa, N. Y.

NEW CROP clover in new sixties. Fine quality. Ton lots. Sample, 10c. Write for prices. Meyer Toom, Knoxville, Iowa, R. D 4.

CHOICE white sweet clover, also extra light amber honey in new 60-pound tins by the case or carload. Dadant & Sons, Hamilton, Illinois.

COMB, fancy clover $3.50; No. 1 clover $3.00; extracted in new 60's, clover, 7c; buckwheat, 5c a pound. Walter A. Wood, Naples, N. Y.

FOR SALE—Fine quality white clover, buckwheat and light amber, new cans, any quantity. Sample 10c. Frank R. Parmelee, Le Roy, N. Y.

WHITE TO WATER white sweet clover honey, also Spanish Needle honey. Very low prices. No free samples. Joe C. Weaver & Sons, Springfield, Mo.

COMB No. 1, to fancy weight, $3.50 per case, nice clover extracted in 60's, 7½c for price in fifty case or can lots. Write H. G. Quirin, Bellevue, Ohio.

NEW CROP white extracted honey in new sixties. One case or a carload. Satisfaction guaranteed. Sample on request. Harry C. Kirk, Armstrong, Iowa.

CLOVER HONEY FROM CLOVERDALE. Ohio's finest clover extracted in 60's. Sample, 10c. Prices upon request. The Cloverdale Apiaries, Cloverdale, Ohio.

WELL RIPENED clover in 5's and 60's; fine buckwheat in 5's, 60's, and 160 pound kegs. Sample 10c deducted from order. Coggshall & Son, Groton, N. Y.

MICHIGAN'S FINEST WHITE CLOVER honey, 7c; light amber, 6c; amber, 5c. New sixties. No disease. You will be pleased. John McColl, Tecumseh, Mich.

QUALITY CLOVER honey, packed in all standard size tin and glass containers. Write for low prices. Earl Alexander, 2521 Fleming Road, Middletown, Ohio.

EXCELLENT QUALITY clover honey in new 60's, 7c; 5 and 10 lb. pails, 8c, in quantity. No. 1 comb, $3.50. Ohmert Honey Company, Dubuque, Iowa.

CLEAN well-ripened clover or buckwheat in 60, 5 and 2½ lb. tins, buckwheat also in kegs, case, or truckload. Sample 10c. Earl Rulison, Route 1, Amsterdam, N. Y.

HOWDY'S HONEY: Fine quality white clover, also buckwheat and light amber mixed extracted in new sixties. White, clover Honey Hunks. Howard Potter, Ithaca, Michigan.

HONEY PACKERS—Write us for prices on carload lots of California and western honeys. We stock all varieties. Hamilton & Company, 108 West Sixth St., Los Angeles, Calif.

NEW clover comb, extra nice, 13 to 16 oz., mostly 15 oz. Very white, well capped; 24 sections, $3.00. Safe arrival by freight guaranteed. Clarence Engle, Kearneysville, W. Va.

NEW YORK State comb and extracted honey, buckwheat and clover, any quantity, all size packages. Five-pound pails my specialty. Edward T. Cary, Midland Ave. and Tallman St., Syracuse, N. Y.

RASPBERRY HONEY blended with clover in new 60-lb. cans for 10 cts. a lb.; 5 or more cans, for 8 cts. a lb.; 10-lb. can by mail prepaid for $2.00. Sample by mail for 20 cts. Elmer Hutchinson & Son, Lake City, Mich.

HONEY AND WAX WANTED

BEEKEEPERS TAKE NOTE—We will not guarantee any honey buyer's financial responsibility and advise all beekeepers to sell for cash only, or on C. O. D. terms except when the buyer has thoroughly established his credit with the seller.

WANTED—White and amber extracted honey. George Eykamp, Cuyahoga Falls, Ohio.

WANTED—White clover honey. New cans only. Clover Blossom Honey Co., 712 Kossuth St., Columbus, O.

WANTED—White or amber extracted honey, any quantity. J. J. Gielow & Sons, Inc., 4189 Cabot Avenue, Detroit, Michigan.

WANTED—Comb, chunk comb, white and light amber extracted honeys. Any amount. Central Ohio Apiaries, Millersport, Ohio.

WANTED—Carlots of honey, state quantity, shipping point and price. Mail sample. Bryant & Cookinham, Inc., Los Angeles, Calif.

WANTED—White and amber extracted Honey, any quantity, also Beeswax. Write The Fred W. Muth Co., Pearl & Walnut Sts., Cincinnati, Ohio.

CASH PAID FOR carloads and less than carloads of extracted honey. Send sample and best price. C. W. Aeppler Company, Oconomowoc, Wisconsin.

FOR SALE

QUEEN PAINTING OUTFITS, $2.00 postpaid. Southwick Apiaries, Waban, Massachusetts.

ELECTRICAL COMB honey uncapping knives $8.00, $10.00, $14.00. Paul Krebs, 8000 Fulton Ave., Detroit, Mich.

YOUR WAX worked into medium brood foundation for 15c pound; 100 pounds, $11.00; thin super, 22c. Fred Peterson, Alden, Iowa.

ATTRACTIVE prices on bee supplies and comb-foundation. Send for catalog. Saves you money. The Fred W. Muth Co., Pearl & Walnut Sts., Cincinnati, Ohio.

WRITE FOR CATALOG. Quality bee supplies at factory store prices. Prompt shipment. Satisfaction guaranteed. The Hubbard Apiaries, Onsted, Michigan.

CARTONS for Cut Comb Honey. New attractive designs with your name and address. Low prices. Fast service. Samples on request. May Carton Co., Box 257, Traverse City, Michigan.

We will buy your WAX or mill it into Schmidt's Economy Foundation. Write us concerning your next season's needs. Finest quality. Prices reasonable. Oscar H. Schmidt, Rt. 4, Bay City, Mich.

QUALITY packs of pure maple products, buckwheat and clover honey in latest styled packages, all sizes. Prices are right. May we have a trial order from you. Northern Maple Syrup Co., Liverpool, N. Y.

FOR SALE—Fine quality queen mailing cages; Root quality bee supplies; both comb and extracted honey. Orders filled promptly. Write us or drive over M53, fifty miles north of Detroit. Hamilton Bee Supply Co., Almont, Michigan.

$11.00 is our price for working 100 pounds of your wax into medium brood. Our large modern bee hive factory is manned by experienced workers, milling thousands of pounds of comb foundation and hundreds of thousands of board feet of lumber into bee hives annually. QUALITY AT LOW COST is our motto. Free catalog. Free shipping tags for your wax. The Walter T. Kelley Co., Paducah, Kentucky.

JUST NEWS

(Contnued from page 717)

Wednesday, December 7, 1938
Apiary Inspectors of America Day
J. E. Starkey, Presiding
8:00-10:00 A. M.

Executive Session
(Exclusively for official Apiary Inspectors)
Appointment of Committees
Round Table discussion of Problems
General Meeting
10:15 A. M.

Interstate Movement of Bees and Inspection Problems of Illinois
Carl E. Killion
10:45 A. M.

Southern Apiary Inspection Problems
Thos. Atchison
11:15 A. M.

Progress Report of Recent Studies on American Foulbrood A. P. Sturtevant
Reports of Committees
Election of Officers
12:15 P. M.

Adjournment
Final League Session W. E. Harrell, Presiding
1:30 P. M.

A Survey of Supersedure
Warren Whitcomb, Jr.
1:45 P. M.

Reports of Committees
Election of Officers
Selection of Meeting Place for 1939
2:45 P. M.

Four Years Observation on Queen Rearing Everett Oertel
3:00 P. M.

Sugar Syrup vs Honey in Queen Rearing S. E. McGregor
3:15 P. M.

Subject to be announced George Rea
7:00 P. M.

Real Louisiana French Crab Boil—on the lake shore

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Southern Beekeeping States' Federation

PROGRAM

Fort Sumter Hotel, Charleston, S. C.
November 28, 1938
8:30 A. .M

Registration
9:30 A. M.

Call to order by the president—L. M. Dewey
10:00 P. M.

Welcome:
W. Tellous Wells, Secretary Charleston Chamber of Commerce, Burnet R. Maybank, Mayor of Charleston and Governor-Nominee of South Carolina
10:30 P. M.

D. W. Watkins, Director of the South Carolina Extension Service
11:15 A. M.

Discussions, Led By:
M. G. Dadant, Editor American Bee Journal
12:00 Noon

Louisiana—W. E. Anderson, Entomologist
Mississippi—Clay Lyle, Entomologist
Texas—Representative to be announced
12:30 P. M.

David S. Blackwell—Educational Adviser, Civilian Conservation Corps
1:00 P. M.

Dinner
2:30 P. M.

Discussions, Led By:
David Dunavan, Teacher of Beekeeping, Clemson Colllege
3:15 P. M.

Tennessee—A. M. Smith, State Apiary Inspector
Alabama—Thomas Atchison, State Apiarist

(Continued on page 725)

BEES AND QUEENS FOR SALE

ITALIAN QUEENS. W. G. Lauver, Middletown, Pa.

ITALIAN QUEENS, 75 cents each. Graydon Bros., Rte. 2, Greenville, Ala.

SILVER RUN QUEENS are sterling. Try them. W. E. Streetman, Fortson, Ga.

Plan Your 1939

Package Bee and Queen

needs early. There is always a rush in the spring. Avoid delays, by planning ahead. NOW is not too early. Write us, giving your probable needs. This obligates you in no way and helps us plan to deliver any size order without delay.

Satisfaction Guaranteed

Rossman & Long

P. O. Box 133 Moultrie, Ga.

Package Bees and Queens

FOR SPRING DELIVERY
ANY QUANTITY

Dependable service and satisfaction guaranteed. Place your order early and be assured of your bees when wanted.

The Universal Apiaries

(York Bee Company)

Jesup, Georgia, U. S. A.

Carniolans Caucasians

The queen-rearing season is over for this year. We want to thank our many customers for their orders. We expect to be prepared next season to take care of a bigger volume of business.

ALBERT G. HANN
Glen Gardner, New Jersey

PACKAGE bees and queens. Place your order for 1939. J. M. Cutts & Sons, Rt. 1, Montgomery, Ala.

QUEENS MAILED ANYWHERE, anytime, at market price. Circular mailed. D. W. Howell, Shellman, Georgia.

Meet us in person at our booth, New Orleans International Beekeepers' Meet. Overbey Apiaries, Bunkie, La.

TO MAKE SURE of a good honey crop, try our Three-banded Italians. Alamance Bee Company, Graham, No. Car.

SEPTEMBER reared choice young laying Italian queens by return mail, 75 cents each. White Pine Bee Farms, Rockton, Pa.

Caucasians. Package bees and queens for 1939. Ready to book your orders for spring delivery. Lewis & Tillery Bee Co., R. 4, Box 132, Greenville, Ala.

200 colonies bees, guaranteed free from disease, in the Arkansas River Valley, at Manzanola, Colo., $5 each. Millers Apiaries, Three Rivers, Texas.

CAUCASIAN BEES—Booking orders for 1939 delivery. We solicit your business based on our ability to please with service and bees. Bolling Bee Co., Bolling, Ala.

300 COLONIES of bees in Minnesota to put out on shares. See or write me at Birchwood, Wis., until Nov. 10. Address later: M. C. Berry, Box 684, Montgomery, Ala.

ITALIAN QUEENS, carefully reared, high producing. European foulbrood resistant. New Jersey Experiment Station stock, 75c. Spicer stock, one dollar. Circular. E. G. Carr, Pennington, N. J.

LONG-TONGUED Caucasian bees and queens. Gentle, prolific, hardy. Better honey gatherers, winter better. Queens, 75c each. 15% discount to dealers. P. B. Skinner Bee Co., Greenville, Ala.

FOR SALE—Property of five acres land, orchard buildings, 120 hives of bees, guaranteed free from disease, supply tanks, extractor, other supplies. A bargain if taken at once. Will consider selling hives separate from place. Conrad H. Tebben, Clara City, Minn.

BUSINESS OPPORTUNITY—Apiary consisting of 20 out-yards, large extracting plant (Root), electrically equipped. Excellent condition, central location. Owner wishes to retire. Investigation invited. Terms arranged with responsible person. Further information upon request. T. E. Hodgins, Kincardine, Ontario.

MISCELLANEOUS

TO TRADE C35 International truck for bees in South. Walter Orange, Ruthton, Minn.

WILL ALLOW good price for beeswax and honey on 1939 queens. Coggshall & Son, Groton, N. Y.

THE BEE WORLD—The leading journal in Great Britain, and the only international bee review in existence. Specializes in the world's news in both science and practice of apiculture. Specimen copy, post free, 12 cents stamps. Membership of the Club, including subscription to the paper, 10/6. The Apis Club. L. Illingsworth. The Way's End, Foxton, Royston, Herts, England.

POULTRY

MAKE MONEY WITH POULTRY—Read America's leading poultry magazine for latest information. Three years $1.00; nine months 25c. Poultry Tribune, Dept. C-52, Mount Morris, Illinois.

A CONFAB

(Continued from page 715)

a matter of primary importance. Incidentally, when a top entrance is used the beekeeper is almost driven to the necessity of providing an alighting space at that point, else he makes it increasingly difficult for bees to get back into the hive in chilly and unfavorable weather.

All in all, it seems to me, the advocates of the top entrance are going out of their way at considerable expense and effort and with damage to the bees just in order to eliminate moisture in the hive—a condition which can be cared for more easily and more economically in another way.

Grant D. Morse,
Saugerties, N. Y.

An Advocate of Top Entrances

Next comes Tom Clouse, Nashport, Ohio, an advocate of top entrances who made a comparison last winter of top and bottom entrances:

Last winter I compared the top and bottom entrances. The results seemed to definitely favor top entrances in a few ways, but I'm reserving my opinion until more time has passed.

The top entrances seemed to be very satisfactory in the following ways. 1. Allowed moisture to escape. 2. Bees wintered near to entrances. 3. Bees guarded entrances much bet ter.

Bees give off moisture when they breathe and this warm air rises and tends to escape from a top entrance. It was very noticeable that the bees were close to or in the top entrances most of the time when other colonies had moved up away from the colder bottom entrances—remember that heat rises. This is of great importance. The bees seem to fly quicker—as a whole—when a few hours of warm weather come. As the bees are next to or in the entrance a mouse would usually have to pass through the cluster of bees to get to unprotected combs. The hives seem to be cleaner, too?

We still use a "wire pack" for my hives, but use more top entrances. Both methods give us good results. Winter has been no problem to us as yet.

T. O'B. Clouse,
Nashport, Ohio

Smith's Bees and Queens for 1939

Get in touch with us before you place your 1939 orders. Our bees and queens are as good as the BEST.

N. B. SMITH & CO.
Calhoun, Alabama

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CAUCASIAN APIARIES,
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Three-Banded Leather-Colored Stock.
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WINNSBORO, Rt. 1, La.

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Bees and Queens for 1939
J. F. McVAY, Jackson, Alabama

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falcon Quality Products

W. T. Falconer Mfg. Company
Falconer, New York

THE HUMBLE BUMBLEBEE

(Continued from page 681)

the store of honey very rapidly. When it has become exhausted the drones and queens will desert the nest and live on the flowers taking shelter almost anywhere.

Mating takes place and the drones die off and only the queens remain alive. Each young queen, as cold weather comes on, seeks some shelter to pass the winter in. She may crawl into a bunch of leaves lodged in a stone wall, into a hollow tree, or under the bark of a log lying in the woods. She hibernates, consuming no food all winter, but comes out in spring none the worse.

The spring brings her out and she soon obeys the instinct which prompts her to seek a place to start her colony. Such is the life of the humble bumblebee.

Norwichtown, Conn.

Better Bred Queens — We are now booking orders of 1939. **CALVERT APIARIES,**

Three Banded Italians — Early booking very much appreciated. **Calvert, Alabama**

We don't mind finding a few gray hairs
Or losing a swarm of bees
We don't mind missing a meal or two
Or paying taxes and fees,
But the thing that gladdens us most of all
In these pre-convention days
Is the beekeepers heading for New Orleans
In any number of ways

AMERICAN HONEY INSTITUTE
Madison, Wisconsin

This space donated to American Honey Institute by Gleanings in Bee Culture.

FOR THE THANKSGIVING DINNER

(Continued from page 683)

Jellied Vegetable Ring

Two tablespoons gelatin, ½ cup cold water, 1½ cups boiling water, ¼ cup vinegar, ¼ cup lemon juice, 5 tablespoons honey, 1½ teaspoons salt, 1 cup shredded cabbage, 1 cup grated raw carrots, ½ cup pimento strips (optional) ½ cup sliced, stuffed olives (optional).

Soften gelatin in the cold water 5 minutes and dissolve in the boiling water. Add vinegar, lemon juice, honey and salt. Cool. When mixture begins to thicken, add vegetables. Pour into ring mold, rinsed in cold water and chill until firm. Serves 10.

Honeyed Sweet Potatoes (with Pecans)

Four boiled potatoes, ¼ cup honey, ½ cup butter, ¼ cup water, and 16 pecan nutmeats. Cut cooked potatoes in half lengthwise. Arrange in one layer in shallow, buttered baking dish. Combine honey, butter and water, heating to make a thin syrup. Pour over potatoes and place two nutmeats on each half. Bake uncovered in moderate oven, 375 degrees, until most of liquid is absorbed, about 30 minutes. Baste frequently while cooking. A teaspoon of grated orange peel and 2 tablespoons of the juice add a delicious tang to this dish.

Aurora, Nebr.

CLASSIFIED ADS

TOO LATE TO CLASSIFY

CARLOAD FINEST New York white clover honey in any container. Angus Carruthers, Syracuse, N. Y., Rt. 2.

NO. 1 AND FANCY light comb honey, $3.00 and $3.50 per case. Extracted, 6c in 60's. H. R. Shelton, Parma, Mich.

HONEY—32, 16, 8, 5 oz jars; 2½, 5, 60 lb. cans. Comb honey. James Scarff, 210 Lincoln Ave., Syracuse, N. Y.

FRAMES: Standard Hoffman, White Pine First Qaulity $28.50 per 1000. Send for free price list today. Northern Bee Supply Co., Osceola, Wisconsin.

"I could not do without your helpful magazine. I read it almost from 'kiver to kiver' and find many helpful and interesting articles. Editorials, Confab, Talks to Beginners, Asked and Answered, etc., are all interesting and helpful."—Lois B. Crum, Mich.

MACK'S QUEENS
They Speak for Themselves
HERMAN McCONNELL
(The Bee & Honey Man)
Robinson, Illinois

JUST NEWS

(Continued from page 721)

3:30 P. M.

C. B. Chamberlain—Curator Vertebrate Zoology, Charleston Museum

3:45 P. M.

L. S. Wolfe—Farm Management Specialist, Farm Security Administration

4:00 P. M.

Boat Trip to Fort Sumter

6:30 P. M.

Supper

7:30 P. M.

Inspectors' Meeting, Starkey in charge

November 29, 1938

9:30 A. M.

Discussions, Led By:

American Honey Institute—Mrs. Harriet Grace

10:00 A. M.

Ladies' Auxiliary—Leader to be announced

10:30 A. M.

A. I. Root Company—Representative to be announced

11:00 A. M.

North Carolina—B. F. Meacham, Teacher of Beekeeping

Georgia—John W. Cash, Beekeeper

11:30 A. M.

Robert E. Foster—State Apiary Inspector

12:30 P. M.

George Abrams—Specialist in Apiculture

1:00 P. M.

Dinner and Story Telling—Led by Kennith Hawkins

2:30 P. M.

Discussions, Led By:

South Carolina—E. S. Prevost, Bee Specialist

3:30 P. M.

G. G. Puett, Commercial Queen Raiser

4:00 P. M.

Florida—Robert E. Foster, State Apiary Inspector

Virginia—H. W. Weatherford, State Apiarist

4:30 P. M.

Sight-seeing

7:00 P. M.

Banquet, Floor Show, Dancing

November 30, 1938

Discussions, Led By:

9:30 A. M.

American Honey Producers' League—George Bohne

10.00 A. M.

Guy LeStourgeon, Editor, Beekeepers' Item

10:30 A. M.

Bee Marketing Agreement—Discussion

11:00 A. M.

George Rea, State Apiarist of New York

11:30 A. M.

Bee Culture Laboratory

12:00 Noon

Report of Committees and Election of Officers

1:00 P. M.

Dinner

2:00 P. M.

Meetings of Special Committees

Adjournment

• • •

The Illinois State Beekeepers' Association will convene at the St. Nicholas Hotel, Springfield, November 9 and 10 for its annual meeting.

• • •

A letter from Dr. E. J. Dyce, Secretary and Treasurer of the Ontario Beekeepers' Association announces the annual meeting of that organization to be held November 22-24 at the King Edward Hotel, Toronto, also a cordial invitation to beekeeping friends this side of the line.

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Italian Queens
Shipped within 24 hours after receipt of your order.
75c each.
CITRONELLE BEE CO.
Citronelle, Ala.

GEORGE REA KNOWS HIS BEES

(Continued from page 688)

George and his Ford went everywhere. He made a survey of the beekeeping in the state, held many local meetings, and organized the North Carolina State Beekeepers' Association.

George's next public job was a state one, when Dean Albert Mann of the New York State Agricultural College asked him to come to New York State for extension work. The state at this time was ravaged by the two diseases among the black and hybrid bees that were then almost universally kept. From December to July, George covered 30 counties, held 51 meetings, and organized 5 new county associations. What a dynamo! He continued this work in New York State until his own state of Pennsylvania called him back as Extension Apiarist in 1921, at a larger salary.

When George Rea returned to New York State extension work in December, 1931, E. F. Phillips had moved from Washington to become professor of apiculture at Cornell University, and the whole picture of beekeeping in the state had changed. Disease and poor wintering had reduced the number of colonies by half; many of the poorer beekeepers had been wiped out; the better beekeepers were climbing back by making use of the newer knowledge of the science of bee behavior; the two foulbrood diseases were under control; packing for wintering out-of-doors was coming into vogue; and fruit growers were waking up to the realization that they needed bees for pollination purposes. The extension service had become highly organized, with helpful county agents eager to assist the specialists, and nearly every county had its own beekeeping association. The modern era of the beekeeping industry was well under way.

The aim of all the work done in extension is educational, and George tries to plan his program so that it is balanced, helping commercial beekeepers, farmer beekeepers, orchard beekeepers and beginners, young and old. He has driven over half a million miles in eight different makes of automobiles, and wherever he goes, he leaves behind him a kindly feeling of friendship and a sympathetic understanding of the problems of beekeeping.

CHEMICAL AND PHYSICAL PROPERTIES OF HONEY

(Continued from page 685)

minutes with any of the so-called reducing sugars. A mixture of dextrose and levulose in approximately equal proportions, as they usually occur in honey, also may be referred to as "invert sugar." This term originates from the fact that when sucrose (cane sugar) is split into dextrose and levulose by the action of the enzyme "invertase" or by the action of acid and heat, the rotation of polarized light is changed to the opposite direction, or is "inverted." That is, sucrose rotates polarized light to the right (dextro-rotation), whereas "invert sugar" rotates it to the left (levo-rotation), and the process of changing sucrose into dextrose and levulose is called "inversion."

It is seen from the above discussion that these simple sugars that occur in honey are known under a number of different names. These names are given here because they are so commonly used to designate these sugars.

(To be continued)

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That in addition to those good Three-Banded Italian Bees and Queens, we manufacture a complete line of long life Cypress Hives, and can save you money.

Write for prices.

The Stover Apiaries

Mayhew, Miss.

Leather Colored Italians

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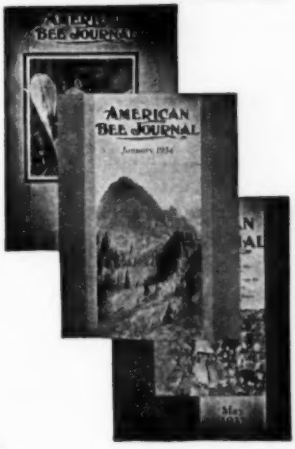

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Expand Now.

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